

THE MONIST.

ANIMAL AUTOMATISM AND CONSCIOUSNESS.

IN ONE of those forcible essays which have done so much to stimulate modern thought, and to evoke that criticism which gives to thought new life and interest, Professor Huxley discussed, with all the fine subtlety tempered by strong common sense which characterises his writings, the hypothesis that animals are automata.¹ The conclusion to which Professor Huxley was led is well known. The hypothesis which in the time of Descartes could be at best but a bold guess based on scanty and insufficient data, was interpreted in the light of modern physiology by an accredited master in that branch of science, and was accepted, not only for animals but for man himself, with the proviso that automatism is not to be regarded as necessarily exclusive of consciousness in any of its phases or in any degree of its development. This essay, at the time of its publication, came in for its full share of criticism. And it is not improbable that the plain man who reads it to-day, desirous of reaching a rational and straight-forward interpretation of the phenomena of animal life, will be inclined to suspect that in contending that animals are conscious automata Professor Huxley allowed his subtlety to outrun his common sense. Such a one will not readily admit that his favorite dog is an automatic machine, conscious or unconscious; nor will he allow to pass unchallenged the statement that this view of the matter "is that which is implicitly, or explicitly, adopted by

¹ *Collected Essays*, Vol. I., Essay V., p. 199.

most persons." And even when he is assured that he, too, is a conscious automaton no less than his four-footed companion, he will, I imagine, hesitate to accept this conclusion as the last word of that science which Professor Huxley himself tells him is trained and organised common sense.

In order that we may be in a position to consider how far such rejection of Professor Huxley's carefully reasoned conclusion is justifiable, it will be necessary to quote two or three salient paragraphs in which his view is set forth with his usual lucidity of expression. The following extracts, from the essay in question, will serve to define Huxley's position :

"When we speak of the actions of the lower animals being guided by instinct and not by reason, what we really mean is that, though they feel as we do, yet their actions are the results of their physical organization. We believe, in short, that they are machines, one part of which (the nervous system) not only sets the rest in motion, and coördinates its movements in relation with changes in surrounding bodies, but is provided with special apparatus, the function of which is the calling into existence of those states of consciousness which are termed sensations, emotions, and ideas. I believe that this generally accepted view is the best expression of the facts at present known."¹

"The consciousness of brutes would appear to be related to the mechanism of their body simply as a collateral product of its working, and to be as completely without any power of modifying that working as the steam whistle which accompanies the work of a locomotive engine is without influence upon its machinery. Their volition, if they have any, is an emotion indicative of physical changes, not a cause of such changes."¹

"Much ingenious argument has at various times been bestowed upon the question : How is it possible to imagine that volition, which is a state of consciousness, and, as such, has not the slightest community of nature with matter in motion, can act upon the moving matter of which the body is composed, as it is assumed to do in voluntary acts? But if, as is here suggested, the voluntary acts of brutes—or, in other words, the acts which they desire to perform—are as purely mechanical as the rest of their actions, and are simply accompanied by the state of consciousness called volition, the inquiry, so far as they are concerned, becomes superfluous. Their volitions do not enter into the chain of causation of their actions at all.

"It is quite true that, to the best of my judgment, the argumentation which applies to brutes holds equally good of men ; and, therefore, that all states of con-

¹p. 238. ²p. 240.

sciousness in us, as in them, are immediately caused by molecular changes of the brain substance. It seems to me that in men, as in brutes, there is no proof that any state of consciousness is the cause of change in the motion of the matter of the organism. If these positions are well based, it follows that our mental conditions are simply the symbols in consciousness of the changes which take place automatically in the organism; and that, to take an extreme illustration, the feeling we call volition, is not the cause of a voluntary act, but the symbol of that state of the brain which is the immediate cause of that act. We are conscious automata, endowed with free will in the only intelligible sense of that much-abused term—inasmuch as in many respects we are able to do as we like—but none the less parts of the great series of causes and effects which, in unbroken continuity, composes that which is, and has been, and shall be—the sum of existence."¹

I take it that Professor Huxley's position, as set forth in the essay from which these passages are quoted, may be summed up in the following propositions:

1. Every movement or molecular change, in the animal body, regarded as a physical occurrence, has a physical antecedent or cause.
2. Certain movements or molecular changes, in the brain or elsewhere, are accompanied by states of consciousness.
3. Such states of consciousness are collateral products which, even if under given conditions they always accompany these changes, serve merely to signify their presence.
4. The term "automaton" is applicable to any piece of mechanism, no matter how complex, all the workings of which at any given time are explicable in terms of physical causation.
5. An animal is such a piece of mechanism some of the physical occurrences in which are accompanied by consciousness as an adjunct.
6. Therefore animals are automata, as above defined.

The first of these propositions may claim, I take it, our unhesitating assent. That every physical occurrence has a physical cause or antecedent, is the fundamental assumption upon which physical science carries on its investigations. So, too, with regard to the second proposition, that certain molecular changes in the brain or elsewhere are accompanied by consciousness. This expresses, in

¹ pp. 243-244.

general terms, the conclusion which physiological psychology tends more and more confidently to endorse. But the third proposition, that consciousness is a collateral product of brain action, introduces a bit of theory which appears to me neither satisfactory nor necessary. I, for one, find as much difficulty in imagining or conceiving how matter in motion can produce consciousness, which, "as such, has not the slightest community of nature with matter in motion," as in conceiving how "volition, which is a state of consciousness, can act upon the moving matter of which the body is composed." The difficulty in each case appears to me to be precisely the same. Moreover, it would seem that each one of us has at least as good reason for believing that one state of consciousness directly suggests another in a chain of psychical causation, as that these conscious states are merely collateral products which symbolise occurrences in a chain of physical causation. Furthermore, the introduction of this piece of theory is unnecessary so far as the present discussion is concerned. The facts, or what we believe to be the facts, are just as well expressed by saying that, from one point of view, certain physical occurrences have conscious concomitants, and that, from another point of view, certain conscious occurrences have physical concomitants; and that, from either point of view, these occurrences are links in a causation chain. This leaves Huxley's main contention exactly where it was. It merely strikes out a redundant hypothesis.

We come now to the fourth proposition. Professor Huxley does not, indeed, anywhere define the terms "automaton" and "automatism"; but the definition above given, that the term "automaton" is applicable to any piece of mechanism all the workings of which at any given time are explicable in terms of physical causation, may, I think, be fairly inferred from what is explicitly or implicitly contained in the essay. And this is no doubt in accord with such a definition as that given in the *Encyclopædia Britannica*, where an automaton is described as "a self-moving machine, or one in which the principle of motion is contained within the mechanism itself." It is true that we are told that "the word is generally applied to contrivances which simulate for a time the motions of ani-

mal life." But if we apply it to *any* of the motions of animal life, there would appear to be no logical grounds for rejecting its application to *all* these motions. And if we accept these definitions as they stand, Huxley's position, as summarised in propositions 5 and 6, follow in logical sequence, and we must hold with him that in the life of animals and man automatism reigns supreme.

We may fairly ask, however, first, whether the definition, so applied, is in accordance with general usage; secondly, whether it is helpful in the study of animal life; and, thirdly, whether it preserves the spirit of the teaching of that acute thinker, René Descartes, whose thought Professor Huxley interpreted in terms of modern science.

It certainly does not appear to be in accordance with common usage. When I receive a telegram from a friend, who has recently returned to England, begging me to come and see him, and deliberate whether, in view of certain engagements into which I have entered, I can accede to his request, it would seem to be scarcely in accordance with established usage to say that I fill in the reply-telegram automatically. Nor would most persons, I imagine, describe my action as instinctive, as they should do if Huxley's view be accepted in its entirety, and if, "when we speak of the actions of the lower animals being guided by instinct, . . . what we really mean is that, though they feel as we do, yet their actions are the results of their physical organisation." For the words which Professor Huxley inserts after instinct—"are guided by instinct and not by reason"—may be omitted if reason, too, like volition, be no less than reflex action, "one of the results of our physical organisation." Nor, again, is it in accordance with established usage to call a being which profits by experience and which is susceptible of progressive education an automaton.

To the second question, as to the first, I am disposed to give a negative answer. Distinctive terms are of service just in so far as they help us to draw the distinctions which are necessary for clearness of thought and expression. If we universalise the term automatism so as to comprise the whole active life of man and animals, it loses all its distinctive value. The term as applied to animal life

is useful just in so far as it serves to distinguish actions which are automatic from others which are not automatic. On these grounds, I am prepared to advocate a more restricted definition, according to which an automatic action is one that we have reason to suppose is not performed under the immediate guidance of consciousness, this phrase being understood to be a shortened expression for "with the intervention of certain controlling physical occurrences which are accompanied by states of consciousness." Of the exact nature and sequence of these physical occurrences, we are at present profoundly ignorant; but of the nature and sequence of the states of consciousness as they occur in ourselves, we do, at any rate, know something. And we may fairly infer the existence of somewhat similar states from the observable behavior of animals.

But does Professor Huxley's position preserve the spirit of the teaching of Descartes? I venture to think not. Huxley himself, in an earlier essay—that on "Descartes's Discourse on Method"—thus briefly indicates the Cartesian conception of the rôle of consciousness:

"According to Descartes all the functions which are common to man and animals are performed by the body as a mere mechanism, and he looks upon consciousness as the peculiar distinction of the '*chose pensante*,' of the 'rational soul,' which in man (and in man only in Descartes's opinion) is superadded to the body. This rational soul he conceived to be lodged in the pineal gland as in a sort of central office; and here, by the intermediation of the animal spirits, it became aware of what was going on in the body, or influenced the operations of the body. Modern physiologists do not ascribe so exalted a function to the little pineal gland, but, in a vague sort of way, they adopt Descartes's principle, and suppose that the soul is lodged in the cortical part of the brain—at least this is commonly regarded as the seat and instrument of consciousness."¹

Now what is the essential feature of Descartes's conception of the part played by consciousness? Is it not that that which controls, stands apart from the automatic mechanism over which its control is exercised? It is true that his enthronement of consciousness in the pineal body was about as wide of the mark as was his

¹ *Collected Essays*, Vol. I., Essay IV., pp. 188-189.

conception of the nerves as conduit pipes through which the animal spirits, pumped from the heart to the brain, are emptied into the muscles. But if in the latter case his principles were sound, though his facts were conjectural, so, too, in the former case, his conception was valid in essence though his pineal gland took no share in its elaboration. And one may be permitted to wonder in what manner, "unwearied dissector and observer" as he was, Descartes regarded the pineal body in the animals he dissected and observed. Was it an empty throne awaiting its royal occupant? This, however, by the way. The essential feature of his teaching, as I understand it, is that when, as in the actions of man, we have evidence of guidance and control, in view of certain data afforded to consciousness, that which guides and controls stands apart from the bodily mechanism concerned in merely automatic response. Descartes himself believed that the soul, enthroned in the pineal gland, performed this function. Later thinkers have believed that the soul used the cerebral cortex as the instrument through which its control was exercised. Professor Huxley, wielding the sword of logic, forces the soul to abdicate its throne, and by his extended hypothesis of automatism does away altogether with the conception of guidance and control. But if we dethrone the soul, and deny its divine right to rule our actions, that is no reason why we should leave the body politic without any form of government. The truer inference is that the cerebral cortex is the organ of control not as the instrument of the soul, (which may or may not exist,¹ so far as the matters we are discussing are concerned,) but in its own right. For the cortex itself stands apart from the lower brain-centres which are concerned in automatism in the more restricted sense.² The cortex is not the instrument of that which controls, but *is*, from the physical point of view, that which controls. The molecular changes therein, evoked by bodily conditions, are such as to augment, or inhibit (and by augmenting here

¹ This I conceive to be the rigidly agnostic position.

² "The cerebral hemispheres, as we have more than once insisted, seem to stand apart from the rest of the brain." Professor M. Foster, *Text-book of Physiology*, 5th Edition, Part III., p. 999.

and inhibiting there to modify¹) the action of the lower automatic centres; and these molecular changes are accompanied by consciousness. The physiology of the future may be able to indicate the physical conditions under which control is effected; but as matters now stand, we know far more about the accompaniments in consciousness than we do about the concomitant molecular changes. In describing therefore what we believe to occur, we may say, if we desire to be somewhat pedantically accurate, that the actions which we term voluntary are the effects of those molecular changes in the cortex which are accompanied by consciousness; or we may say in brief and to avoid circumlocution, that they are the results of conscious guidance and control. Thus we preserve the essence of Descartes's teaching but interpret it in terms of modern scientific thought.

On all grounds, then, a more restricted definition of the term "automaton" than that which Professor Huxley adopted in his later Essay² seems advisable; on the ground of general usage, on the ground of scientific utility, and on the ground of historical precedent. And our consideration of Descartes's teaching helps us to reach a further definition of animal automatism, in the more restricted sense. Automatic action is that which is performed without the immediate and effective intervention of those molecular changes in the cerebral cortex which are accompanied by consciousness (such intervention being rendered possible by association); or, in brief, automatic action is that which is performed without conscious guidance and control. Consciousness as an adjunct there may be; but it takes no share in the direction of active response.

Professor Huxley returns to the subject of animal automatism in a subsequent essay—that on *The Connection of the Biological Sci-*

¹Descartes used similar expressions when he likened the rational soul to the engineer amidst the automatic figures of a grotto "when he wishes to increase, or to slacken, or in some way to alter their movements." Quoted by Huxley, *Collected Essays*, Vol. I., Essay IV., p. 183.

²In his earlier essay on Descartes's Discourse he seems to accept the more restricted usage. See his remarks on the effects of education by which acts become mechanical. *Loc. cit.*, p. 188. See also the sentences at the top of p. 187.

*ences with Medicine*¹ (1881)—and indicates certain modifications of Descartes's views which more recent biological conceptions had seemingly rendered necessary. He says:²

"But though, as I think, there is no doubt that Descartes was the first to propound the fundamental conception of the living body as a physical mechanism, which is the distinctive feature of modern, as contrasted with ancient physiology, he was misled by the natural temptation to carry out, in all its details, a parallel between the machines with which he was familiar, such as clocks and pieces of hydraulic apparatus, and the living machine. In all such machines there is a central source of power, and the parts of the machine are merely passive distributors of that power. The Cartesian school conceived of the living body as a machine of that kind."

Professor Huxley then leads up to the modern conception of the animal body as constituted by a multitude of cell-units, together with certain of their products; and quotes from Bichat the following intermediate conception:

"All animals," says Bichat, "are assemblages of different organs, each of which performs its function and concurs, after its fashion, in the preservation of the whole. They are so many special machines in the general machine which constitutes the individual. But each of these special machines is itself compounded of many tissues of very different natures, which in truth constitute the elements of these organs."³

In view of this conception of the body as a complex structure composed of special organs and tissues, supplemented by the more recent conception of the tissues themselves as constituted of cellular units, Descartes's views stand in need of restatement, and Huxley thus indicates the nature of the modification required:

"The proposition of Descartes that the body of a living man is a machine, the actions of which are explicable by the known laws of matter and motion, is," he says, "unquestionably largely true. But it is also true, that the living body is a synthesis of innumerable physiological elements [the cell-units], each of which [is] susceptible of structural metamorphosis and functional metabolism: and that the only machinery, in the precise sense in which the Cartesian school understood mechanism, is that which co-ordinates and regulates these physiological units into an organic whole."⁴

¹*Collected Essays*, Vol. III., pp. 350 et. seq.

²*Loc. cit.*, pp. 362-363.

³*Loc. cit.*, p. 367.

⁴*Loc. cit.*, pp. 368-369.

Huxley then proceeds to show that, with regard to the action of the living protoplasm of the cell unit, physiologists fall into two schools. First, those "who look with as little favor as Bichat did upon any attempt to apply the principles and the methods of physics and chemistry to the investigation of the vital processes of growth, metabolism, and contractility;" and secondly, those who "look to molecular physics to achieve the analysis of living protoplasm itself into a molecular mechanism." And he himself accepts the latter alternative. "Living matter," he says, "differs from other matter in degree and not in kind; the microcosm repeats the macrocosm; and one chain of causation connects the nebulous original of suns and planetary systems with the protoplasmic foundation of life and organisation."¹

So far good. Professor Huxley, however, does not proceed, with his accustomed thoroughness, to exhibit the connexion of this conception of cellular automatism with the modified Cartesian view, according to which, he says, the only machinery is that which coordinates and regulates these physiological units into an organic whole. I may perhaps be permitted to do so in terms of that restricted automatism which I am here advocating.

Every cell may be regarded as a minute machine specially fitted to produce certain chemical products or to undergo certain physical changes under the conditions which obtain in the living body. Groups of these minute cellular machines constitute tissues and organs in which their joint and related activities are effectively combined. The organ thus forms a composite machine; and its products or its physical changes are the net result of the mechanical transactions in the cell units of which it is constituted. And the machine is an automatic one in the sense that every physical change which occurs therein has physical antecedents or causes. But it also presents this peculiarity; that the structure of the machine is modified by its functional activity; that it is to some extent a plastic machine which is moulded to its work by the performance of that work. So that if we speak of it as a piece of automatic mechanism

¹*Loc. cit.*, pp. 370-371.

we must remember that its automatism is, within certain limits, capable of adaptive modification; that there is in addition to automatic performance and automatic adjustment something more, namely adaptation to new conditions. Whether it is well to apply the term "automatic" to such adaptation is a matter that is open to discussion. The conception of automatism carries with it, for me, an idea of relative fixity and invariability with which the idea of plasticity and adaptation is incongruous; and I should myself prefer to say that organic adaptation to environing conditions is something beyond and superadded to automatism.

We must in any case distinguish between the multifarious molecular processes which occur in muscular and glandular tissues and the co-ordinating processes which occur in nervous centres, and which serve to give unity to the working of the compound mechanism of the body at large. It is here that we find that machinery, "in the precise sense in which the Cartesian school understood mechanism," which regulates the activities of the physiological units and co-ordinates them into an organic whole. But there are two distinct types of the regulative process involved in this co-ordination; the one characterised by relative fixity and invariability; the other characterised by relative plasticity and adaptation. It is to the former that the term animal automatism is, I conceive, properly applicable. It comprises that co-ordination which is seen in reflex action and in instinctive response. It involves no intervention of conscious guidance and control. In so far as it is subject to modification it ceases to be automatic in character. Strongly contrasted with this type of regulative co-ordination is that which gives plasticity to the organism as a whole. It comprises that co-ordination which is seen in voluntary action and renders acquisition possible. It exercises a more or less modifying influence on instinctive responses and thus lifts them above the level of automatism. It involves the direct intervention of those molecular cortical processes which have for their conscious concomitants what we term choice, based on previous individual experience and dependent upon the association of impressions and ideas.

On this view an intelligent (and still more a rational) automa-

tion is a contradiction in terms. Intelligence takes in hand the automatism presented through heredity, modifies it, and, in the early days of life drills the activities and reorganises them into habits.

When a drill-sergeant takes in hand a number of raw recruits he has to keep a vigilant eye on all their actions, checking useless, misguided, or mistaken activity in this direction, eliciting more prompt and more vigorous response to his commands in that direction; making his men act not as isolated units but as constituent members of a corporate body, and aiming throughout at that co-ordinated action on which their future efficiency will depend; so that, when they take their places in the ranks, each may be ready to perform his own part, in due subordination to the combined action of the whole, without faltering and without hesitation. The men are duly organised into squads, companies, battalions, and so on; and thus we have a disciplined army with its brigades, divisions, and army corps; with its artillery, engineers, cavalry, and infantry; with its staff divided into intelligence, commissariat, and medical departments, each with distinctive responsibilities and under its own especial commanding officers; the whole capable of the most varied and yet most orderly evolutions at the will of the commander-in-chief.

It is the function of consciousness, represented in the flesh by the cerebral cortex, to drill and organise the active forces of the animal body in a somewhat analogous manner. But when it enters upon its duties consciousness finds that a considerable amount of the drilling has already been done for it. There is no need to teach the organic mechanism how certain activities are to be performed. They are already carried out automatically. The intelligence department, with its special senses and so forth, is already organised so far as the supply of information is concerned. The commissariat department, digestive organs, heart, lungs, and the rest, is in pretty good working order and eagerly on the look-out for supplies. Many complex activities, adaptive actions of the reflex kind and of the type termed instinctive, are at once performed without the guidance of consciousness under appropriate conditions. Consciousness merely looks on and makes a memorandum of what is going for-

ward. The number and the complexity of those instinctive activities that consciousness thus finds ready to its hand varies in the different grades of animal life; being at a maximum in such forms as insects and spiders; being more marked in birds than in mammals; and being inconspicuous or difficult to trace in man. There are, however, also many more or less isolated activities, with very little initial adaptive value, which resemble raw recruits. Such are the comparatively aimless and random limb-movements of the human infant, as he lies helpless on his mother's lap. Consciousness has to lick these into shape; to combine and organise their vague efforts in directions that are useful for the purposes of animal life, and adapted to the conditions under which the forces of that life are employed; gradually to bring the effective work done by the several companies, represented by groups of muscles, into due relation to each other; and to assume the supreme command of all the forces and thus to carry on the battle of life at the best advantage.

Such an analogy as this must not be pressed too far. It is adduced merely for the purposes of illustration. The drill-sergeant, for example, is dealing with intelligent beings themselves capable of directing and controlling their own actions. But consciousness as a drill-sergeant is dealing with automatic movements or activities, instinctive or random as the case may be, themselves incapable of self-guidance. What the analogy here serves to illustrate is this, that neither the drill-sergeant, on the one hand, nor consciousness, on the other hand, can directly produce the activities which are dealt with. The activities must be given. The utmost that can be done is to stimulate some to increased energy of action and to check or repress others. The activities cannot be created or produced: they can only be educed or reduced. Secondly, just as the drill-sergeant must vigilantly watch his men, since he is dependent on such observation for information as to the correct performance of their actions; so, too, is consciousness entirely dependent on the information received through the incoming channels or afferent nerves for the data upon which its guidance, through the exercise of its power of augmentation, and inhibition, is based. Thirdly,

just as the superior officer has to bring into due relation the evolutions which are carried out under the control of his subordinates, so does consciousness correlate the data received through many groups of different nerves and co-ordinate a number of varied activities into a more or less definite course of behavior. It is true that the analogy here again, to some extent, fails us, since the drill-sergeant and his superior officer are separate individuals, while consciousness is continuous and is drill-sergeant and superior officer rolled into one. But, though this continuity of consciousness remains unbroken, we have abundant evidence, in the course of our own experience, of the fact that, during the gradual establishment of the supreme conscious control of the bodily activities, the regulation of details of active response is, step by step, relegated to subconscious guidance, which, though constantly in touch with, requires but little attention from, the supreme centres of voluntary control. The horseman, the cyclist, the pianist, knows well that, when once skill has been attained, such further guidance as is required under the special conditions of any particular performance of the act of skill may be safely left to subconsciousness, scarcely troubling the attention at all. Habit has, in large degree, rendered these actions part of the acquired automatism. But consciousness, like a wise superior officer, still keeps vigilant watch. So long as the performance is satisfactory and accurate the superior officer sees as if he saw not; but when anything goes wrong, consciousness, as superior officer, steps in more or less smartly and decisively.

Few are likely to question the importance in animal life of the acquisition of habits, including, as we must, under this term, nearly all the varied forms of animal skill. For even when the skill is founded upon a congenital and instinctive basis, it is (except, perhaps, in some instinctive activities of insects and other invertebrates) improved and guided to finer and more delicate issues in the course of individual experience. So that we may regard the function of consciousness as twofold; first, it is concerned in the establishment of habits; and, secondly, it is concerned in the utilisation of all the active powers, including the habits so established, in meeting the varied requirements of daily life.

How, then, we may proceed to ask, is the guidance of consciousness effected? Upon what principles are the acquisition of skill and the utilisation of skill to be explained?

There can be no question that, from the psychological point of view, the association of impressions and ideas is of fundamental importance. Whatever may be the position assigned to so-called "association by contiguity" in human psychology, there can be no question as to its essential importance in the more primitive psychology of such animals as young birds and young mammals. When chicks learn rapidly to distinguish between the caterpillars of the cinnabar moth and those of the cabbage moth, so that they gobble up the one without hesitation and avoid the other without fail, they give us the plainest intimation which can be conveyed by objective signs that an association has been formed in either case between appearance and taste. Professor Preyer notes that his chicks rapidly learnt to associate the sound of tapping with the presence of food. I have elsewhere described how one of my chicks which had but recently learnt to drink standing in its tin, subsequently stopped as it ran through the water in such a way as to lead one to infer that the wet feet had become associated with the satisfaction of thirst. Young pheasants seemed to associate water with the sight of a toothpick on which I gave them drops. Ducklings so thoroughly associated water with the sight of their tin that they tried to drink from it and wash in it, though it was empty, nor did they desist for some minutes. A young moor-hen, for whose benefit we had dug up worms with a spade, and which, standing by, jumped on the just-turned sod and seized every wriggling speck which caught his keen eye, would soon run from some distance to me so soon as I took hold of the spade. There is no need to multiply instances of this kind. The study of these young birds is an impressive lesson in association psychology, and one daily grows more convinced of the importance of association in the acquisition of experience of this homely elementary but essentially practical kind.

But it may be said that though association is unquestionably important, yet its efficiency in the guidance of action depends upon something deeper still. Granted that, in a chick which has

first seen and then tasted a nasty morsel, an association is formed between sight and taste, so that on a subsequent occasion its peculiar appearance suggests its peculiar nastiness. What is the connexion between the nastiness of a cinnabar caterpillar and the checking of the tendency to eat it, or between the niceness of a cabbage moth caterpillar and the added energy with which it is seized? Why do taste-stimuli of one kind have the one effect and taste-stimuli of a different kind have just the opposite effect? What are the physiological concomitants of the augmentation of response in the one case and of the inhibition of response in the other case? I conceive that there is but one honest answer to these questions. We do not know. This and much beside must be left for the physiology of the future to explain. This much may be said: Certain stimuli call forth cortical disturbances, the result of which is the inhibition of activities leading to the repetition of these stimuli; certain others call forth cortical disturbances the result of which is the augmentation of the activities which lead to their repetition. The accompaniments in consciousness of the latter we call pleasurable; the accompaniments in consciousness of the former we call unpleasant, distasteful, or painful. That appears to be a plain statement of the facts as we at present understand them.

Now there can be no question as to the strongly-marked hereditary element in such augmentation of response when the cortical disturbances have pleasurable concomitants and the inhibition of response when the cortical disturbances have unpleasant concomitants. This is, in fact, grounded on the innate powers or faculties which the organism derives from its parents or more distant ancestors. But if the cortical augmentation and inhibition form the basis upon which all acquisition and all control are based, what becomes of the distinction between instinctive and acquired activities? What of that between automatic and controlled behavior? Do we not come back, after all, to the universal automatism advocated by Professor Huxley?

Let us look again at the facts. A chick sees for the first time in its life a cinnabar caterpillar, instinctively pecks at it under the influence of the visual stimulus; seizes it, and instinctively shrinks

under the influence of the taste stimulus. So far we have instinct and automatism. Presently we throw to it another similar caterpillar. Instinct and automatism alone would lead to a repetition of the previous series of events—seeing, seizing, tasting, shrinking. The oftener the experiment was performed the more smoothly would the organic mechanism work, the more definitely would the same sequence be repeated—seeing, seizing, tasting, shrinking. Is this what we actually observe? Not at all. On the second occasion the chick acts differently as the result of the previous experience. Though he sees, he does not seize, but shrinks without seizing. We believe that there is a revival in memory of the nasty taste. And in this we seem justified, since we may observe that sometimes the chick, on such occasions, wipes its bill on the ground as he does when he experiences an unpleasant taste, though he has not touched the larva. The chick, then, does not continue to act merely from instinct and like an automaton. His behavior is modified in the light of previous experience. What, then, has taken place in and through which this modification, born of experience, is introduced? In answering this question we seem to put our finger upon that in virtue of which the distinction now regarded as of so much biological significance—that between congenital and acquired activities—has a valid existence. The answer may be given in two words—*Association* and the *Suggestion* that arises therefrom. The chick's first experience of the cinnabar caterpillar leads to an association between the appearance of the larva and its taste; or, from the physiological point of view, a direct connexion between the several cortical disturbances. On the second occasion the taste is suggested by the sight of the cinnabar larva; or, physiologically, the disturbance associated with taste is directly called forth by the disturbance associated with sight. It is through association and suggestion that an organism is able to profit by experience and that its behavior ceases to be merely instinctive and automatic. And such association would seem to be a purely individual matter—founded, no doubt, on an innate basis, linking activities of the congenital type, but none the less wholly dependent upon the immediate touch of individual experience.

In watching, then, the behavior of young birds or other animals, we observe a development which we interpret as the result of conscious choice and selection. For the chick, to which a handful of mixed caterpillars is thrown, chooses out the nice ones and leaves the nasty ones untouched. The selection is dependent upon an innate power of association which needs the quickening touch of individual experience to give it activity and definition, without which it lies dormant as a mere potentiality. On this conscious selection and choice depends throughout its entire range this development of those habits which are acquired as opposed to those which are congenital; and on it depends the whole of mental as contrasted with merely biological evolution. On it, too, depends the distinction between animal automatism, in the restricted sense here advocated, and those higher powers which, though founded thereon, constitute a new field of evolutionary progress.

C. LLOYD MORGAN.

THE REGENERATED LOGIC.

THE appearance of Schroeder's *Exact Logic*¹ has afforded much gratification to all those homely thinkers who deem the common practice of designating propositions as "unquestionable," "undoubtedly true," "beyond dispute," etc., which are known to the writer who so designates them to be doubted, or perhaps even to be disputed, by persons who with good mental capacities have spent ten or more years of earnest endeavor in fitting themselves to judge of matters such as those to which the propositions in question relate, to be no less heinous an act than a trifling with veracity, and who opine that questions of logic ought *not* to be decided upon philosophical principles, but on the contrary, that questions of philosophy ought to be decided upon logical principles, these having been themselves settled upon principles derived from the only science in which there has never been a prolonged dispute relating to the proper objects of that science. Among those homely thinkers the writer of this review is content to be classed.

Why should we be so much gratified by the appearance of a single book? Do we anticipate that this work is to convince the philosophical world? By no means; because we well know that prevalent philosophical opinions are not formed upon the above principles, nor upon any approach to them. A recent little paper by an eminent psychologist concludes with the remark that the ver-

¹ *Vorlesungen über die Algebra der Logik (Exakte Logik).* Von Dr. Ernst Schröder, Ord. Professor der Mathematik an der technischen Hochschule zu Karlsruhe in Baden. Dritter Band. *Algebra und Logik der Relative.* Leipzig: B. G. Teubner. 1895. Price, 16 M.

dict of a majority of four of a jury, provided the individual members would form their judgments independently, would have greater probability of being true than the unanimous verdict now is. Certainly, this may be assented to; for the present verdict is not so much an opinion as a resultant of psychical and physical forces. But the remark seemed to me a pretty large concession from a man imbued with the idea of the value of modern opinion about philosophical questions formed according to that scientific method which the Germans and their admirers regard as the method of modern science,—I mean, that method which puts great stress upon co-operation and solidarity of research even in the early stages of a branch of science, when independence of thought is the wholesome attitude, and gregarious thought is really sure to be wrong. For, as regards the verdict of German *university professors*, which, excepting at epochs of transition, has always presented a tolerable approach to unanimity upon the greater part of fundamental questions, it has always been made up as nearly as possible in the same way that the verdict of a jury is made up. Psychical forces, such as the spirit of the age, early inculcations, the spirit of loyal discipline in the general body, and that power by virtue of which one man bears down another in a negotiation, together with such physical forces as those of hunger and cold, are the forces which are mainly operative in bringing these philosophers into line; and none of these forces have any direct relation to reason. Now, these men write the larger number of those books which are so thorough and solid that every serious inquirer feels that he is obliged to read them; and his time is so engrossed by their perusal that his mind has not the leisure to digest their ideas and to reject them. Besides, he is somewhat overawed by their learning and thoroughness. This is the way in which certain opinions—or rather a certain verdict—becomes prevalent among philosophical thinkers everywhere; and reason takes hardly the leading part in the performance. It is true, that from time to time, this prevalent verdict becomes altered, in consequence of its being in too violent opposition with the changed spirit of the age; and the logic of history will usually cause such a change to be an advance toward truth in some respect. But this process is so slow, that it

is not to be expected that any rational opinion about logic will become prevalent among philosophers within a generation, at least.

Nevertheless, hereafter, the man who sets up to be a logician without having gone carefully through Schroeder's Logic will be tormented by the burning brand of *false pretender* in his conscience, until he has performed that task; and that task he cannot perform without acquiring habits of exact thinking which shall render the most of the absurdities which have hitherto been scattered over even the best of the German treatises upon logic impossible for him. Some amelioration of future treatises, therefore, though it will leave enough that is absurd, is to be expected; but it is not to be expected that those who form their opinions about logic or philosophy rationally, and therefore not gregariously, will ever comprise the majority even of philosophers. But opinions thus formed, and among such those formed by thoroughly informed and educated minds, are the only ones which need cause the homely thinker any misgiving concerning his own.

It is a remarkable historical fact that there is a branch of science in which there has never been a prolonged dispute concerning the proper objects of that science. It is the mathematics. Mistakes in mathematics occur not infrequently, and not being detected give rise to false doctrine, which may continue a long time. Thus, a mistake in the evaluation of a definite integral by Laplace, in his *Mécanique céleste*, led to an erroneous doctrine about the motion of the moon which remained undetected for nearly half a century. But after the question had once been raised, all dispute was brought to a close within a year. So, several demonstrations in the first book of Euclid, notably that of the 16th proposition, are vitiated by the erroneous assumption that a part is necessarily less than its whole. These remained undetected until after the theory of the non-Euclidean geometry had been completely worked out; but since that time, no mathematician has defended them; nor could any competent mathematician do so, in view of Georg Cantor's, or even of Cauchy's discoveries. Incessant disputations have, indeed, been kept up by a horde of undisciplined minds about quadratures, cyclotomy, the theory of parallels, rotation, attraction, etc. But the disputants

are one and all men who cannot discuss any mathematical problem without betraying their want of mathematical power and their gross ignorance of mathematics at every step. Again, there have been prolonged disputes among real mathematicians concerning questions which were not mathematical or which had not been put into mathematical form. Instances of the former class are the old dispute about the measure of force, and that lately active concerning the number of constants of an elastic body; and there have been sundry such disputes about mathematical physics and probabilities. Instances of the latter class are the disputes about the validity of reasonings concerning divergent series, imaginaries, and infinitesimals. But the fact remains that concerning strictly mathematical questions, and among mathematicians who could be considered at all competent, there has never been a single prolonged dispute.

It does not seem worth while to run through the history of science for the sake of the easy demonstration that there is no other extensive branch of knowledge of which the same can be said.

Nor is the reason for this immunity of mathematics far to seek. It arises from the fact that the objects which the mathematician observes and to which his conclusions relate are objects of his mind's own creation. Hence, although his proceeding is not infallible,—which is shown by the comparative frequency with which mistakes are committed and allowed,—yet it is so easy to repeat the inductions upon new instances, which can be created at pleasure, and extreme cases can so readily be found by which to test the accuracy of the processes, that when attention has once been directed to a process of reasoning suspected of being faulty, it is soon put beyond all dispute either as correct or as incorrect.

Hence, we homely thinkers believe that, considering the immense amount of disputation there has always been concerning the doctrines of logic, and especially concerning those which would otherwise be applicable to settle disputes concerning the accuracy of reasonings in metaphysics, the safest way is to appeal for our logical principles to the science of mathematics, where error can only long go unexploded on condition of its not being suspected.

This double assertion, first, that logic ought to draw upon

mathematics for control of disputed principles, and second that ontological philosophy ought in like manner to draw upon logic, is a case under a general assertion which was made by Auguste Comte, namely, that the sciences may be arranged in a series with reference to the abstractness of their objects; and that each science draws regulating principles from those superior to it in abstractness, while drawing data for its inductions from the sciences inferior to it in abstractness. So far as the sciences can be arranged in such a scale, these relationships must hold good. For if anything is true of a whole genus of objects, this truth may be adopted as a principle in studying every species of that genus. While whatever is true of a species will form a datum for the discovery of the wider truth which holds of the whole genus. Substantially the following scheme of the sciences is given in the *Century Dictionary*:

MATHEMATICS			
Philosophy	{	Logic	
		Metaphysics.	
Science of Time		Geometry	
Nomological Psychics	{	Nomological Physics	Molar
			Molecular
			Ethereal
Classificatory Psychics	{	Classificatory Physics	Chemistry
			Biology, or the
			chemistry of
Descriptive Psychics		Descriptive Physics	protoplasm
PRACTICAL SCIENCE.			

Perhaps each psychical branch ought to be placed above the corresponding physical branch. However, only the first three branches concern us here.

Mathematics is the most abstract of all the sciences. For it makes no external observations, nor asserts anything as a real fact. When the mathematician deals with facts, they become for him mere "hypotheses"; for with their truth he refuses to concern himself. The whole science of mathematics is a science of hypotheses; so that nothing could be more completely abstracted from concrete reality. Philosophy is not quite so abstract. For though it makes no *special* observations, as every other positive science does, yet it does deal with reality. It confines itself, however, to the universal

phenomena of experience; and these are, generally speaking, sufficiently revealed in the ordinary observations of every-day life. I would even grant that philosophy, in the strictest sense, confines itself to such observations as *must* be open to every intelligence which can learn from experience. Here and there, however, metaphysics avails itself of one of the grander generalisations of physics, or more often of psychics, not as a governing principle, but as a mere datum for a still more sweeping generalisation. But logic is much more abstract even than metaphysics. For it does not concern itself with any facts not implied in the supposition of an unlimited applicability of language.

Mathematics is not a positive science; for the mathematician holds himself free to say that A is B or that A is not B , the only obligation upon him being, that as long as he says A is B , he is to hold to it, consistently. But logic begins to be a positive science; since there are some things in regard to which the logician is not free to suppose that they are or are not; but acknowledges a compulsion upon him to assert the one and deny the other. Thus, the logician is forced by positive observation to admit that there is such a thing as doubt, that some propositions are false, etc. But with this compulsion comes a corresponding responsibility upon him not to admit anything which he is not forced to admit.

Logic may be defined as the science of the laws of the stable establishment of beliefs. Then, *exact* logic will be that doctrine of the conditions of establishment of stable belief which rests upon perfectly undoubted observations and upon mathematical, that is, upon *diagrammatical*, or, *iconic*, thought. We, who are sectaries of "exact" logic, and of "exact" philosophy, in general, maintain that those who follow such methods will, so far as they follow them, escape all error except such as will be speedily corrected after it is once suspected. For example, the opinions of Professor Schröder and of the present writer diverge as much as those of two "exact" logicians well can; and yet, I think, either of us would acknowledge that, however serious he may hold the errors of the other to be, those errors are, in the first place, trifling in comparison with the original and definite advance which their author has, by the

"exact" method, been able to make in logic, that in the second place, they are trifling as compared with the errors, obscurities, and negative faults of any of those who do not follow that method, and in the third place, that they are chiefly, if not wholly, due to their author not having found a way to the application of diagrammatical thought to the particular department of logic in which they occur.

"Exact" logic, in its widest sense, will (as I apprehend) consist of three parts. For it will be necessary, first of all, to study those properties of beliefs which belong to them as beliefs, irrespective of their stability. This will amount to what Duns Scotus called *speculative grammar*. For it must analyse an assertion into its essential elements, independently of the structure of the language in which it may happen to be expressed. It will also divide assertions into categories according to their essential differences. The second part will consider to what conditions an assertion must conform in order that it may correspond to the "reality," that is, in order that the belief it expresses may be stable. This is what is more particularly understood by the word *logic*. It must consider, first, *necessary*, and second, *probable* reasoning. Thirdly, the general doctrine must embrace the study of those general conditions under which a problem presents itself for solution and those under which one question leads on to another. As this completes a triad of studies, or trivium, we might, not inappropriately, term the last study *Speculative rhetoric*. This division was proposed in 1867 by me, but I have often designated this third part as *objective logic*.

Dr. Schröder's Logic is not intended to cover all this ground. It is not, indeed, as yet complete; and over five hundred pages may be expected yet to appear. But of the seventeen hundred and sixty-six pages which are now before the public, only an introduction of one hundred and twenty-five pages rapidly examines the speculative grammar, while all the rest, together with all that is promised, is restricted to the deductive branch of logic proper. By the phrase "exact logic" upon his title-page, he means logic treated algebraically. Although such treatment is an aid to exact logic, as defined on the last page, it is certainly not synonymous with it. The principal utility of the algebraic treatment is stated

by him with admirable terseness: it is "to set this discipline free from the fetters in which language, by force of custom, has bound the human mind." Upon the algebra may, however, be based a calculus, by the aid of which we may in certain difficult problems facilitate the drawing of accurate conclusions. A number of such applications have already been made; and mathematics has thus been enriched with new theorems. But the applications are not so frequent as to make the elaboration of a facile calculus one of the most pressing desiderata of the study. Professor Schröder has done a great deal in this direction; and of course his results are most welcome, even if they be not precisely what we should most have preferred to gain.

The introduction, which relates to first principles, while containing many excellent observations, is somewhat fragmentary and wanting in a unifying idea; and it makes logic too much a matter of feeling. It cannot be said to belong to exact logic in any sense. Thus, under β (Vol. I., p. 2) the reader is told that the sciences have to suppose, not only that their objects really exist, but also that they are knowable and that for every question there is a true answer and but one. But, in the first place, it seems more exact to say that in the discussion of one question nothing at all concerning a wholly unrelated question can be implied. And, in the second place, as to an inquiry presupposing that there is some one truth, what can this possibly mean except it be that there is one destined upshot to inquiry with reference to the question in hand,—one result, which when reached will never be overthrown? Undoubtedly, we hope that this, or something approximating to this, is so, or we should not trouble ourselves to make the inquiry. But we do not necessarily have much confidence that it is so. Still less need we think it is so about the majority of the questions with which we concern ourselves. But in so exaggerating the presupposition, both in regard to its universality, its precision, and the amount of belief there need be in it, Schröder merely falls into an error common to almost all philosophers about all sorts of "presuppositions." Schröder (under ϵ , p. 5) undertakes to define a contradiction in terms without having first made an ultimate analysis of the propo-

sition. The result is a definition of the usual peripatetic type; that is, it affords no analysis of the conception whatever. It amounts to making the contradiction in terms an ultimate unanalysable relation between two propositions,—a sort of blind reaction between them. He goes on (under 2, p. 9) to define, after Sigwart, logical consequentiality, as a *compulsion of thought*. Of course, he at once endeavors to avoid the dangerous consequences of this theory, by various qualifications. But all that is to no purpose. Exact logic will say that *C*'s following logically from *A* is a state of *things* which no impotence of thought can alone bring about, unless there is also an impotence of existence for *A* to be a fact without *C* being a fact. Indeed, as long as this latter impotence exists and can be ascertained, it makes little or no odds whether the former impotence exists or not. And the last anchor-hold of logic he makes (under 2) to lie in the correctness of a feeling! If the reader asks *why* so subjective a view of logic is adopted, the answer seems to be (under 3, p. 2), that in this way Sigwart escapes the necessity of founding logic upon the theory of cognition. By the theory of cognition is usually meant an explanation of the possibility of knowledge drawn from principles of psychology. Now, the only sound psychology being a special science, which ought itself to be based upon a well-grounded logic, it is indeed a vicious circle to make logic rest upon a theory of cognition so understood. But there is a much more general doctrine to which the name theory of cognition might be applied. Namely, it is that speculative grammar, or analysis of the nature of assertion, which rests upon observations, indeed, but upon observations of the rudest kind, open to the eye of every attentive person who is familiar with the use of language, and which, we may be sure, no rational being, able to converse at all with his fellows, and so to express a doubt of anything, will ever have any doubt. Now, proof does not consist in giving superfluous and superpossible certainty to that which nobody ever did or ever will doubt, but in removing doubts which do, or at least might at some time, arise. A man first comes to the study of logic with an immense multitude of opinions upon a vast variety of topics; and they are held with a degree of confidence, upon which, after he has

studied logic, he comes to look back with no little amusement. There remains, however, a small minority of opinions that logic never shakes; and among these are certain observations about assertions. The student would never have had a desire to learn logic if he had not paid some little attention to assertion, so as at least to attach a definite signification to assertion. So that, if he has not thought more accurately about assertions, he must at least be conscious, in some out-of-focus fashion, of certain properties of assertion. When he comes to the study, if he has a good teacher, these already dimly recognised facts will be placed before him in accurate formulation, and will be accepted as soon as he can clearly apprehend their statements.

Let us see what some of these are. When an assertion is made, there really is some speaker, writer, or other sign-maker who delivers it; and he supposes there is, or will be, some hearer, reader, or other interpreter who will receive it. It may be a stranger upon a different planet, an æon later; or it may be that very same man as he will be a second after. In any case, the deliverer makes signals to the receiver. Some of these signs (or at least one of them) are supposed to excite in the mind of the receiver familiar images, pictures, or, we might almost say, *dreams*,—that is, reminiscences of sights, sounds, feelings, tastes, smells, or other sensations, now quite detached from the original circumstances of their first occurrence, so that they are free to be attached to new occasions. The deliverer is able to call up these images at will (with more or less effort) in his own mind; and he supposes the receiver can do the same. For instance, tramps have the habit of carrying bits of chalk and making marks on the fences to indicate the habits of the people that live there for the benefit of other tramps who may come on later. If in this way a tramp leaves an assertion that the people are stingy, he supposes the reader of the signal will have met stingy people before, and will be able to call up an image of such a person attachable to a person whose acquaintance he has not yet made. Not only is the outward significant word or mark a sign, but the image which it is expected to excite in the mind of the receiver will likewise be a sign,—a sign by resemblance, or, as we

say, an *icon*,—of the similar image in the mind of the deliverer, and through that also a sign of the real quality of the thing. This icon is called the *predicate* of the assertion. But instead of a single *icon*, or sign by resemblance of a familiar image or “dream,” evocable at will, there may be a complexus of such icons, forming a composite image of which the whole is not familiar. But though the whole is not familiar, yet not only are the parts familiar images, but there will also be a familiar image of its mode of composition. In fact, two types of complication will be sufficient. For example, one may be conjunctive and the other disjunctive combination. Conjunctive combination is when two images are both to be used at once; and disjunctive when one or other is to be used. (This is not the most scientific selection of types; but it will answer the present purpose.) The sort of idea which an icon embodies, if it be such that it can convey any positive information, being applicable to some things but not to others, is called a *first intention*. The idea embodied by an icon which cannot of itself convey any information, being applicable to everything or to nothing, but which may, nevertheless, be useful in modifying other icons, is called a *second intention*.

The assertion which the deliverer seeks to convey to the mind of the receiver relates to some object or objects which have forced themselves upon his attention; and he will miss his mark altogether unless he can succeed in forcing those very same objects upon the attention of the receiver. No icon can accomplish this, because an icon does not relate to any particular thing; nor does its idea strenuously force itself upon the mind, but often requires an effort to call it up. Some such sign as the word *this*, or *that*, or *hullo*, or *hi*, which awakens and directs attention must be employed. A sign which denotes a thing by forcing it upon the attention is called an *index*. An index does not describe the qualities of its object. An object, in so far as it is denoted by an index, having *thisness*, and distinguishing itself from other things by its continuous identity and forcefulness, but not by any distinguishing characters, may be called a *hecceity*. A hecceity in its relation to the assertion is a *subject*

thereof. An assertion may have a multitude of subjects; but to that we shall return presently.

Neither the predicate, nor the subjects, nor both together, can make an *assertion*. The assertion represents a compulsion which experience, meaning the course of life, brings upon the deliverer to attach the predicate to the subjects as a sign of them taken in a particular way. This compulsion strikes him at a certain instant; and he remains under it forever after. It is, therefore, different from the temporary force which the hecceities exert upon his attention. This new compulsion may pass out of mind for the time being; but it continues just the same, and will act whenever the occasion arises, that is, whenever those particular hecceities and that first intention are called to mind together. It is, therefore, a permanent conditional force, or *law*. The deliverer thus requires a kind of sign which shall signify a law that to objects of indices an icon appertains as sign of them in a given way. Such a sign has been called a *symbol*. It is the *copula* of the assertion.

Returning to the subjects, it is to be remarked that the assertion may contain the suggestion, or request, that the receiver *do* something with them. For instance, it may be that he is first to take any one, no matter what, and apply it in a certain way to the icon, that he is then to take another, perhaps this time a suitably chosen one, and apply that to the icon, etc. For example, suppose the assertion is: "Some woman is adored by all catholics." The constituent icons are, in the probable understanding of this assertion, three, that of a woman, that of a person, *A*, adoring another, *B*, and that of a non-catholic. We combine the two last disjunctively, identifying the non-catholic with *A*; and then we combine this compound with the first icon conjunctively, identifying the woman with *B*. The result is the icon expressed by, "*B* is a woman, and moreover, either *A* adores *B* or else *A* is a non-catholic." The subjects are all the things in the real world past and present. From these the receiver of the assertion is suitably to choose one to occupy the place of *B*; and then it matters not what one he takes for *A*. A suitably chosen object is a woman, and any object, no matter what, adores her, unless that object be a non-catholic.

This is forced upon the deliverer by experience; and it is by no idiosyncrasy of his; so that it will be forced equally upon the receiver.

Such is the meaning of one typical assertion. An assertion of *logical necessity* is simply one in which the subjects are the objects of any collection, no matter what. The consequence is, that the icon, which can be called up at will, need only to be called up, and the receiver need only ascertain by experiment whether he can distribute any set of indices in the assigned way so as to make the assertion false, in order to put the truth of the assertion to the test. For example, suppose the assertion of logical necessity is the assertion that from the proposition, "Some woman is adored by all catholics," it logically follows that "Every catholic adores some woman." That is as much as to say that, for every imaginable set of subjects, either it is false that some woman is adored by all catholics or it is true that every catholic adores some woman. We try the experiment. In order to avoid making it false that some woman is adored by all catholics, we must choose our set of indices so that there shall be one of them, *B*, such that, taking any one, *A*, no matter what, *B* is a woman, and moreover either *A* adores *B* or else *A* is a non-catholic. But that being the case, no matter what index, *A*, we may take, either *A* is a non-catholic or else an index can be found, namely, *B*, such that *B* is a woman, and *A* adores *B*. We see, then, by this experiment, that it is impossible so to take the set of indices that the proposition of consecution shall be false. The experiment may, it is true, have involved some blunder; but it is so easy to repeat it indefinitely, that we readily acquire any desired degree of certitude for the result.

It will be observed that this explanation of logical certitude depends upon the fact of speculative grammar that the predicate of a proposition, being essentially of an ideal nature, can be called into the only kind of existence of which it is capable, at will.

A not unimportant dispute has raged for many years as to whether hypothetical propositions (by which, according to the traditional terminology, I mean any compound propositions, and not merely those *conditional* propositions to which, since Kant, the term

has often been restricted) and categorical propositions are one in essence. Roughly speaking, English logicians maintain the affirmative, Germans the negative. Professor Schröder is in the camp of the latter, I in that of the former.

I have maintained since 1867 that there is but one primary and fundamental logical relation, that of illation, expressed by *ergo*. A proposition, for me, is but an argumentation divested of the assertoriness of its premise and conclusion. This makes every proposition a conditional proposition at bottom. In like manner a "term," or class-name, is for me nothing but a proposition with its indices or subjects left blank, or indefinite. The common noun happens to have a very distinctive character in the Indo-European languages. In most other tongues it is not sharply discriminated from a verb or participle. "Man," if it can be said to mean anything by itself, means "what I am thinking of is a man." This doctrine, which is in harmony with the above theory of signs, gives a great unity to logic; but Professor Schröder holds it to be very erroneous.

Cicero and other ancient writers mention a great dispute between two logicians, Diodorus and Philo, in regard to the significance of conditional propositions. This dispute has continued to our own day. The Diodoran view seems to be the one which is natural to the minds of those, at least, who speak the European languages. How it may be with other languages has not been reported. The difficulty with this view is that nobody seems to have succeeded in making any clear statement of it that is not open to doubt as to its justice, and that is not pretty complicated. The Philonian view has been preferred by the greatest logicians. Its advantage is that it is perfectly intelligible and simple. Its disadvantage is that it produces results which seem offensive to common sense.

In order to explain these positions, it is best to mention that *possibility* may be understood in many senses; but they may all be embraced under the definition that that is possible which, in a certain state of information, is not known to be false. By varying the supposed state of information all the varieties of possibility are obtained. Thus, *essential* possibility is that which supposes nothing

to be known except logical rules. *Substantive* possibility, on the other hand, supposes a state of omniscience. Now the Philonian logicians have always insisted upon beginning the study of conditional propositions by considering what such a proposition means in a state of omniscience; and the Diodorans have, perhaps not very adroitly, commonly assented to this order of procedure. Duns Scotus terms such a conditional proposition a "*consequentia simplex de inesse*." According to the Philonians, "If it is now lightening it will thunder," understood as a consequence *de inesse*, means "It is either not now lightening or it will soon thunder." According to Diodorus, and most of his followers (who seem here to fall into a logical trap), it means it is now lightening and it will soon thunder.

Although the Philonian views lead to such inconveniences as that it is true, as a consequence *de inesse*, that if the Devil were elected president of the United States, it would prove highly conducive to the spiritual welfare of the people (because he will not be elected), yet both Professor Schröder and I prefer to build the algebra of relatives upon this conception of the conditional proposition. The inconvenience, after all, ceases to seem important, when we reflect that, no matter what the conditional proposition be understood to mean, it can always be expressed by a complexus of Philonian conditionals and denials of conditionals. It may, however, be suspected that the Diodoran view has suffered from incompetent advocacy, and that if it were modified somewhat, it might prove the preferable one.

The consequence *de inesse*, "if A is true, then B is true," is expressed by letting i denote the actual state of things, A_i mean that in the actual state of things A is true, and B_i mean that in the actual state of things B is true, and then saying "If A_i is true then B_i is true," or, what is the same thing, "Either A_i is not true or B_i is true." But an *ordinary* Philonian conditional is expressed by saying, "In *any* possible state of things, i , either A_i is not true, or B_i is true."

Now let us express the categorical proposition, "Every man is wise." Here, we let m_i mean that the individual object i is a man,

and w_i mean that the individual object i is wise. Then, we assert that, "taking any individual of the universe, i , no matter what, either that object, i , is not a man or that object, i , is wise"; that is, whatever is a man is wise. That is, "whatever i can indicate, either m_i is not true or w_i is true. The conditional and categorical propositions are expressed in precisely the same form; and there is absolutely no difference, to my mind, between them. The form of relationship is the same.

I find it difficult to state Professor Schröder's objection to this, because I cannot find any clear-cut, unitary conception governing his opinion. More than once in his first volume promises are held out that § 28, the opening section of the second volume, shall make the matter plain. But when the second volume was published, all we found in that section was, as far as repeated examination has enabled me to see, as follows. First, hypothetical propositions, unlike categoricals, essentially involve the idea of time. When this is eliminated from the assertion, they relate only to two possibilities, what always is and what never is. Second, a categorical is always either true or false; but a hypothetical is either true, false, or meaningless. Thus, "this proposition is false" is meaningless; and another example is, "the weather will clear as soon as there is enough sky to cut a pair of trousers." Third, the supposition of negation is forced upon us in the study of hypotheticals, never in that of categoricals. Such are Schröder's arguments, to which I proceed to reply.

As to the idea of time, it *may* be introduced; but to say that the range of possibility in hypotheticals is always a unidimensional continuum is incorrect. "If you alone trump a trick in whist, you take it." The possibilities are that each of the four players plays any one of the four suits. There are 2^6 different possibilities. Certainly, the universe in hypotheticals is far more frequently finite than in categoricals. Besides, it is an *ignoratio elenchi* to drag in time, when no logician of the English camp has ever alleged anything about propositions involving time. That is not the question. Every proposition is either true or false, and something not a proposition, when considered as a proposition, is, from the Philo-

nian point of view, true. To be objectionable, a proposition must assert something; if it is merely neutral, it is not positively objectionable, that is, it is not false. "This proposition is false," far from being meaningless, is self-contradictory. That is, it means two irreconcilable things. That it involves contradiction (that is, leads to contradiction if supposed true), is easily proved. For if it be true, it is true; while if it be false, it is false. Every proposition besides what it explicitly asserts, tacitly implies its own truth. The proposition is not true unless *both*, what it explicitly asserts and what it tacitly implies, are true. This proposition, being self-contradictory, is false; and hence, what it explicitly asserts is true. But what it tacitly implies (its own truth) is false. The difficulty about the proposition concerning the piece of blue sky is not a logical one, at all. It is no more senseless than any proposition about a "red odor" which might be a term of a categorical.

The fact stated about negation is only true of the sorts of propositions which are commonly put into categorical and hypothetical shapes, and has nothing to do with the essence of the propositions. In a paper "On the Validity of the Laws of Logic" in the *Journal of Speculative Philosophy*, Vol. II., I have given a sophistical argument that black is white, which shows in the domain of categoricals the phenomena to which Professor Schröder refers as peculiar to hypotheticals.

The *consequentia de inesse* is, of course, the extreme case where the conditional proposition loses all its proper signification, owing to the absence of any range of possibilities. The conditional proper is, "In any possible case, *i*, either A_i is not true, or B_i is true." In the consequence *de inesse* the meaning sinks to, "In the true state of things, *i*, either A_i is not true or B_i is true."

My general algebra of logic (which is not that algebra of dual relations, likewise mine, which Professor Schröder prefers, although in his last volume he often uses this general algebra) consists in simply attaching indices to the letters of an expression in the Boolean algebra, making what I term a Boolean, and prefixing to this a series of "quantifiers," which are the letters Π and Σ , each with an index attached to it. Such a quantifier signifies that every individual of

the universe is to be substituted for the index the Π or Σ carries, and that the non-relative product or aggregate of the results is to be taken.

Properly to express an ordinary conditional proposition the quantifier Π is required. In 1880, three years before I developed that general algebra, I published a paper containing a chapter on the algebra of the copula (a subject I have since worked out completely in manuscript). I there noticed the necessity of such quantifiers properly to express conditional propositions; but the algebra of quantifiers not being at hand, I contented myself with considering consequences *de inesse*. Some apparently paradoxical results were obtained. Now Professor Schröder seems to accept these results as holding good in the general theory of hypotheticals; and then, since such results are in strong contrast with the doctrine of categoricals, he infers, in § 45 of his Vol. II., a great difference between hypotheticals and categoricals. But the truth simply is that such hypotheticals want the characteristic feature of conditionals, that of a range of possibilities.

In connexion with this point, I must call attention to a mere algebraical difference between Schröder and me. I retain Boole's idea that there are but two *values* in the system of logical quantity. This harmonises with my use of the general algebra. Any two numbers may be selected to represent those values. I prefer 0 and a positive logarithmic ∞ . To express that something is A and something is not A , I write:

$$\infty = \Sigma_i A_i \quad \infty = \Sigma_j \bar{A}_j$$

or, what is the same thing:

$$\Sigma_i A_i > 0 \quad \Sigma_j \bar{A}_j > 0.$$

I have no objection to writing, as a mere abbreviation, which may, however, lead to difficulties, if not interpreted:

$$A > 0 \quad \bar{A} > 0.$$

But Professor Schröder understands these formulæ literally, and accordingly *rejects* Boole's conception of two values. He does not seem to understand my mode of apprehending the matter; and

hence considers it a great limitation of my system that I restrict myself to two values. In fact, it is a mere difference of algebraical form of conception. I very much prefer the Boolean idea as more simple, and more in harmony with the general algebra of logic.

Somewhat intimately connected with the question of the relation between categoricals and hypotheticals is that of the quantification of the predicate. This is the doctrine that identity, or equality, is the fundamental relation involved in the copula. Holding as I do that the fundamental relation of logic is the illative relation, and that only in special cases does the premise follow from the conclusion, I have in a consistent and thoroughgoing manner opposed the doctrine of the quantification of the predicate. Schröder seems to admit some of my arguments; but still he has a very strong *penchant* for the equation.

Were I not opposed to the quantification of the predicate, I should agree with Venn that it was a mistake to replace Boole's operation of addition by the operation of aggregation, as most Booleans now do. I should consider the "principle of duality" rather an argument *against* than *for* our modern practice. The algebra of dual relatives would be almost identical with the theory of matrices were addition retained; and this would be a great advantage.

It is Schröder's predilection for equations which motives his preference for the algebra of dual relatives, namely, the fact that in that algebra, even a simple undetermined inequality can be expressed as an equation. I think, too, that that algebra has merits; it certainly has uses to which Schröder seldom puts it. Yet, after all, it has too much formalism to greatly delight me,—too many bushels of chaff *per* grain of wheat. I think Professor Schröder likes algebraic formalism better, or dislikes it less, than I.

He looks at the problems of logic through the spectacles of equations, and he formulates them, from that point of view, as he thinks, with great generality; but, as I think, in a narrow spirit. The great thing, with him, is to solve a proposition, and get a *value* of x , that is, an equation of which x forms one member without occurring in the other. How far such equation is *iconic*, that is, has a meaning, or exhibits the constitution of x , he hardly seems to

care. He prefers general values to particular roots. Why? I should think the particular root alone of service, for most purposes, unless the general expressions were such that particular roots could be deduced from it,—particular instances, I mean, *showing* the constitution of x . In most instances, a profitable solution of a mathematical problem must consist, in my opinion, of an exhaustive examination of special cases; and quite exceptional are those fortunate problems which mathematicians naturally prefer to study, where the enumeration of special cases, together with the pertinent truths about them, flow so naturally from the general statement as not to require separate examination.

I am very far from denying the interest and value of the problems to which Professor Schröder has applied himself; though there are others to which I turn by preference. Certainly, he has treated his problems with admirable power and clearness. I cannot in this place enter into the elementary explanations which would be necessary to illustrate this for more than a score of readers.

In respect to individuals, both non-relative and pairs, he has added some fundamental propositions to those which had been published. But he is very much mistaken in supposing that I have expressed contrary views. He simply mistakes my meaning.

In regard to algebraical signs, I cannot accept any of Professor Schröder's proposals except this one. While it would be a serious hindrance to the promulgation of the new doctrine to insist on new types being cut, and while I, therefore, think my own course in using the dagger as the sign of relative addition must be continued, yet I have always given that sign in its cursive form a scorpion-tail curve to the left; and it would be finical to insist on one form of curve rather than another. In almost all other cases, in my judgment, Professor Schröder's signs can never be generally received, because they are at war with a principle, the general character of which is such that Professor Schröder would be the last of all men to wish to violate it, a principle which the biologists have been led to adopt in regard to their systematic nomenclature. It is that priority must be respected, or all will fall into chaos. I will not enter further into this matter in this article.

Of what use does this new logical doctrine promise to be? The first service it may be expected to render is that of correcting a considerable number of hasty assumptions about logic which have been allowed to affect philosophy. In the next place, if Kant has shown that metaphysical conceptions spring from formal logic, this great generalisation upon formal logic must lead to a new apprehension of the metaphysical conceptions which shall render them more adequate to the needs of science. In short, "exact" logic will prove a stepping-stone to "exact" metaphysics. In the next place, it must immensely widen our logical notions. For example, a class consisting of a lot of things jumbled higgledy-piggledy must now be seen to be but a degenerate form of the more general idea of a *system*. Generalisation, which has hitherto meant passing to a larger class, must mean taking in the conception of the whole system of which we see but a fragment, etc., etc. In the next place, it is already evident to those who know what has already been made out, that that speculative rhetoric, or objective logic, mentioned at the beginning of this article, is destined to grow into a colossal doctrine which may be expected to lead to most important philosophical conclusions. Finally, the calculus of the new logic, which is applicable to everything, will certainly be applied to settle certain logical questions of extreme difficulty relating to the foundations of mathematics. Whether or not it can lead to any method of discovering methods in mathematics it is difficult to say. Such a thing is conceivable.

It is now more than thirty years since my first published contribution to "exact" logic. Among other serious studies, this has received a part of my attention ever since. I have contemplated it in all sorts of perspectives and have often reviewed my reasons for believing in its importance. My confidence that the key of philosophy is here, is stronger than ever after reading Schröder's last volume. One thing which helps to make me feel that we are developing a living science, and not a dead doctrine, is the healthy mental independence it fosters, as evidenced, for example, in the divergence between Professor Schröder's opinions and mine. There is no bovine nor ovine gregariousness here. But Professor Schröder and

I have a common method which we shall ultimately succeed in applying to our differences, and we shall settle them to our common satisfaction; and when that method is pouring in upon us new and incontrovertible positively valuable results, it will be as nothing to either of us to confess that where he had not yet been able to apply that method he has fallen into error.

C. S. PEIRCE.

NEW YORK CITY.

FROM BERKELEY TO HEGEL.

A CHAPTER OF THE HISTORY OF PHILOSOPHY EMBODYING A CRITIQUE OF THE PANLOGIST PHASE OF IDEALISM.

τὸ δ' αὐτὸ ἐστὶν ἢ κατ' ἐνέργειαν ἐπιστήμη τῆ
πράγματος.—Aristotle.

ACCORDING to Schopenhauer, Berkeley is to be viewed as the "father of Idealism which is the foundation of all true philosophy," a tribute which probably voices the opinion of a very large number of persons. In sober truth, however, this tribute is misleading. Plato, Aristotle (whose idealistic leanings Berkeley himself noted with approval¹), and Plotinus among the ancients; Descartes, Malebranche, etc., etc., among modern philosophers all had a share in the making of Idealism, and their claims to notice cannot be summarily dismissed in the fashion favored by Schopenhauer. Indeed, *modern* Idealism is a river with numerous sources. And Idealism *as a whole* is not only of great antiquity, but the forms which it has assumed are most varied. It cannot be traced back to any one originator. None the less, however, is the value of Berkeley's work to be emphasised. We may well honor him as the first of modern thinkers who gave the ground-principle of Idealism its full due, asserting as he did *without show of reservation* that empirical Reality, as well "physical" as "mental," is simply a presentment for consciousness. It is in championing this truth and exposing at the same time the fallacies of vulgar realism that his

¹ *Siris*, §§ 304-329.

permanent contribution to philosophy consists. Some luminous psychological work apart, his other achievements are of scant value and show poorly alongside the more thorough thinking of the Germans. His positive metaphysic inspired, it would appear, by his study of the Greeks and designed to proffer a merely improved rendering of the particular form of Theism current in his time, possesses no more than a historic interest. To-day even Idealistic Theists look for light not to Berkeley, but rather to the leaders of the Hegelian "Right." However, the obsolescence of the form of Theism, which he upheld, should in no way diminish our admiration of the beauty and force of his criticism of vulgar realism. If I may be allowed to cite what I have urged elsewhere, "He showed in sun-clear language that perception and its objects are inseparable; that the world is as truly suspended in consciousness as is the most subtle of thoughts or emotions. It is this emphatic preaching of Idealism which ennobles him. Others before him had been Idealists, but none gave so luminous a defence of their faith."¹ Idealism is, of course, a term of wide import embracing strangely opposed schools of thought, but it may be confidently averred that "subjective," "sceptical," "critical," "psychological," "panlogist," etc., etc., idealists will all alike, when pressed, concede their indebtedness to the stimulus given by Berkeley. Sometimes, it is true, we note a tendency to patronise the Bishop,—and Kant himself is not altogether innocent in this regard,—but the attempts deceive nobody. Well has it been said that but for Berkeley there would have been no Hume and but for Hume no Kant. Aye, and but for Kant,—Fichte, Schelling, Hegel, Schopenhauer, and many of the leading idealists of to-day might never have caught the sparks that kindled their genius.

Δις καὶ τρίς τὸ καλόν. In studying Berkeley one is apt to think him a "padder," a thinker who beats out a few grains of gold so as to cover acres. The answer is, of course, that he spoke as a pioneer; as an innovator who had to win adhesion to first principles before venturing to construct an elaborate system. Owing to the

¹ *Riddle of the Universe*, p. 51.

stupidity of his critics he had to waste time over the A B C of Idealism and to keep on restating one or two main points almost *ad nauseam*. That he felt desirous of completing a regular system we may fairly argue from the *Siris*, which certainly is an ambitious advance on the earlier works. But not even that advance, notable as in many ways it is, redeems his philosophy from sketchiness. "*Without is within*," says Berkeley. Let it be so, says Hegel, and philosophy has still to begin. The same things that were called *without* or *noumenal* are now called *within* or phenomenal, but, call them as you may, it is their *systematic explanation* that is wanted. Such systematic explanation, embracing man and the entire round of his experiences . . . is alone philosophy, and to that no repetition of *without is within*, or *matter is phenomenal*, will ever prove adequate."¹ Berkeley of course really says more than this, but it will scarcely be disputed that it is his "*without is within*" rather than his metaphysical constructions, few and faulty as they are, that gives him his influence in philosophy. His standpoint, owing to the sketchiness above noted is one of a class the antithesis of that including Hegel—it admits of presentation in a short space. He is a Nominalist, and disciple of Locke who starts from the "given"—from experience—yet with a wish as Churchman to get somehow satisfactorily beyond this "given." No word-jugglery, however, for him; the discipline of Empiricism has pruned that bias, he must think in the presence of the object, not of mere phantoms of verbal thought. The start, then, is from experience, viewed at first from a quite Humean standpoint,² but latterly from that of an individualistic idealism. "The world is my presentment," matter a general name connoting phases of objects which are themselves only "ideas" or modes of consciousness—this contention is driven home persistently. The doubt that the seemingly individual "Ego" may possibly have to be resolved into a Universal Ego does

¹ Hutchison Stirling Notes to Schwegler's *History of Philosophy*, p. 419, 8th edition.

² The Mind (Ego) is described in the *Commonplace Book* as a "congeries of perceptions"—only in a later stage as that which has the perceptions. It is, of course, this phase of Berkeley that Hume subsequently developed.

not trouble him. So far, then, so good. Seeing, however, that objects are ideas, modes of consciousness, why are they presented in the fashion in which we experience them? They appear, is the reply, not as mere modes of self-unfolding Egos, but as results of the working on these egos of a Divine Mind—of an intellect, an *actus purus*, in which the archetypes of all ideas of sense hang *realiter*. There is a multiplicity of subordinate individual Egos which know multiple worlds, all resolvable into shadowy ectypal phases of these luminous Archetypal Ideas. Berkeley tells us in the *Siris* that "sense implies an *impression* from some other being and denotes a *dependence* in the soul which hath it. Sense is a passion; and passions imply imperfection. God knoweth all things as pure mind or intellect; but nothing by sense nor through a Sensory" (*Siris*, § 289). Proceeding on these lines, he approximates to a system of Platonic Ideas upheld in a Supreme Idea, and transformed by it in part and obscurely to us individuals. Still there is a very notable contrast to be indicated. Berkeley's IDEAS are in no way the empty abstractions re-ified by Plato; indeed, the worship of "Universals" (those makeshifts of our weak intellects striving to extend their empire by way of *symbols* and *words*) would have been inconsistent with his sturdy Nominalism. Such preposterous figments as "Likeness," "Greatness," "Smallness," and like hypostatized attributes have no interest for him. Not shadowy Universals, but *concrete*, stable, unitary archetypes of the concrete but transient objects present in our *numerically different* worlds constitute his quarry. Thus the many Vesuvii present in the consciousness of human percipients are for him *ectypes* only of the complete *archetype* Vesuvius which obtains in the Divine Mind, and in which we share only in a most confused and imperfect manner. The solution is certainly compatible with Nominalism. The Berkeleyan Archetype is not a vague Platonic *abstraction*, such as "volcanicity" or "magnitude," but a *particular*, though an exceedingly complex, object in the consciousness of God. And unlike Plato's idle Universals, it is conceived as energising freely on us, thereby calling into reality the phenomenal or ectypal object we know.

The history of Idealism necessarily comprises that controversy

as to "Relations," latterly so emphasised, and, I must add, absurdly complicated and confused by German Epistemologists. Berkeley's attitude in this regard is instructive. At the outset of his thinking he was obviously too absorbed in his analysis of "Matter" and "visual space" to notice the as yet unexposed blemishes in Locke's Theory of Experience. He was content to view the development of perception out of space and time-ordered sensations much as did Locke, save that he laid more stress on what would be now called "Association" as interpreter of sense, and distinguished most ably between the space of our mature, and the space of our dawning, consciousness. Locke's obscurities touching "Ideas of Relation" in general seem to have at first quite escaped his notice. It is interesting, therefore, to detect in his later work, the *Siris*, gleams of what may almost be termed Kantian thinking, and the obvious weakening of his old sensationalist bias; a bias which in his case, as in many others, in no way impaired his loyalty to idealism. "Strictly the Sense knows nothing" (§ 253). "As Understanding perceiveth not, so Sense knoweth not" (§ 305). And how suggestively he alludes to the *tabula rasa* doctrine. "Some perhaps may think the truth to be this:—that there are properly no ideas or passive objects in the mind but what were derived from sense, but that there are also besides those *her own acts or operations; such as notions*" (§ 308). One is here within measurable distance of the Kantian Categories. I say measurable only because these notions are still present in the vaguest possible way and indeed grew wholly out of Berkeley's studies of Platonism (so markedly apparent in the *Siris*), not out of the so notably novel epistemological way of viewing things which yielded Kant's *Critique*. Still Berkeley evinces a distinct tendency to substitute *intelligi* for *percipi* as the support even of our ectypal imperfect worlds.

Idealism is the only possible form of a competent metaphysic, —this view, if left somewhat indeterminate, it is Berkeley's signal merit to have emphasised. But his Theological rendering of Idealism is faulty. The Berkeleyan Deity is advanced as a theologian's substitute for the "stupid, thoughtless somewhat" which Locke posited as the substance of objects and cause of our sensations.

And the positing of this Deity as *cause* of the said sensations involves an assumption, nowhere adequately vindicated by Berkeley, to wit., that of the transcendent validity of Causality, i. e. the belief that the notion of cause and effect can be used, not only within the confines of experience, but also to explain experience itself as *caused* by an agency or agencies beyond its pale. A consistent empiricism cannot accommodate this truly portentous assumption. That our sensations *must* have a cause beyond ourselves who have them is a view requiring close criticism. And that the cause is a Personal Deity, himself no *sensating* Ego but a purely *intellectual* being, who somehow affects us across a void, is a further development of hypothesis, open to still more exacting criticism.

In mooting his theory of Sensations Berkeley observes that their cause must be sought in spirit, "since of that we are conscious as active,—yet not in the spirit of which we are conscious, since there would be then no difference between real and imaginary ideas; therefore in a Divine Spirit." But it is not at all necessary to seek for the cause in the *conscious segments* of our Egos or "spirits," for nobody believes that we *consciously* originate our sensations. It may well be urged that the said Egos or "spirits," like Leibnitzian monads, evolve both their sensations and ideas out of themselves, *only attaining self-awareness or consciousness as result of their self-activity*. Berkeley himself admits that the Ego is not an "idea," but rather *that which has ideas*. Why, then, should not this veiled Ego produce sensations for itself and fusing with, and opposing to, these the requisite "imaginary" ideas, suspend a perfectly satisfactory microcosm within itself? Such a view would at least allow him to dispense with an uncritical *assumption* of the transcendent validity of Causality. He would not then depart from the closed circle of the individual Ego, for which the Experience, which has to be interpreted, obtains.

This Theological Idealism is, therefore, improperly established at the outset. Nor, while thus improperly established, does it constitute even a good working explanation of Reality. Exposition of a *coherent, slowly-unfolding world-whole*, in some way *common* to, and the *nursery* of, all percipients is denied us. The actual world, the

world known to science and "common sense," is for Berkeley only a series of transient perceptions in us and animals, an aggregate of phenomena that come and go in the consciousness of numerically different "spirits." Nature is a tangle of broken, one-sided, and very limited experiences in us and like dependent individuals; the history of the solar system, æons of which, as science and common sense hold, preceded the evolution of our consciousness, is demolished at a stroke. It may, indeed, be urged that Berkeley has posited an archetypal Nature in the Divine Mind; a Nature, the *esse* of which is not dependent on *percipi*, so far at any rate as men, animals, etc., are concerned; and that this Nature is competent to furnish a full explanation of the standing of the "ectypal" worlds we know. The difficulty, however, is to show how this timeless unitary and complete Nature is dovetailed with the time-conditioned, numerically-different, and miserably fragmentary Natures which are suspended in the consciousness of human and lower egos. We have here a problem which was never solved, or, to the best of my knowledge, even confronted by Berkeley.

We may here indicate a further difficulty, one, however, by no means peculiar to the theological idealism of Berkeley. What is the *ultimate ground* of the egos or "spirits" on which the Deity is said to imprint sensations? Is this ground God himself? Berkeley and some influential moderns are of this opinion. But surely it is absurd to posit any individual, however exalted, as the ground of individuals who in respect of their bare individuality are necessarily *other than himself*? One centre of consciousness may affect other centres of consciousness, but how is it that the latter are *in situ* to be affected at all? If, on the other hand, God is not the ultimate ground of the Egos we seem driven to accept Pluralism, or to posit a deeper principle of which Deity and the Egos are alike mere aspects, a principle not in itself conscious as prius, but withal the source of consciousness. And this last consideration opens up a theme of momentous importance with bearings not only on a passing system such as Berkeleyanism, but on the interpretation of Idealism for all time. It has been voiced in varied phases by many

writers; for the present let us consider its purport in the regard of Berkeley.

That my or Smith's consciousness has had a history, that we as self-cognitive beings arose in time, is certain. Or to put the matter otherwise, at the present moment our Egos, in Berkeleyan phraseology, have "ideas," that is to say feel, think, and perceive. But feelings, thoughts, and perceptions are ever coming and going and if we trace their sequences back far enough we shall reach by inference a point when our Egos had *no conscious experience* at all. What, then, of these Egos posited as devoid of a consciously known content—as unprovided by Deity with sensations? Obviously we reach *consciousless centres*; hence, if we wish to retain multiple Berkeleyan Egos, we must retain them not as conscious spirits, but rather as Leibnitzian monads, potentially but not necessarily always actually conscious. But this is not all. One of the great objections that wars against the Theism of Leibnitz wars against that of Berkeley. On what grounds is a *conscious* "Mind" posited as *prius* of the Reality imparted to these multiple Egos? If Berkeley requires an "active power," not inherent in the Egos themselves, to account for sensations, why must that Power be assumed as conscious rather than META-CONSCIOUS? If Experience is to be his guide, he ought not, of course, to overstep it by means of a notion (causality) borrowed uncritically from it. But even had his use of this Notion been vindicated, he ought to have borne in mind that Experience reveals every known conscious individual or "empirical ego" as *arising in time*, the actual as always a mere oasis in the potential, that our very perceptions of objects are replete with ideas of sensations which *may* be, but are not, realised, that the area of consciousness even in the case of a Titan of knowledge is always at any given moment most narrow. Experience in fact is *all* in favor of the Metaconscious as *prius* of the conscious, not, therefore, in favor of a Theistic Idealism. I am aware, however, that many neo-Hegelians view consciousness as the "form of eternity," and that Berkeley is on this count in very good modern company. By these thinkers, as by Berkeley, Reality, grasped in inadequate and inconsistent pieces by us, is viewed as all-together in a conscious God, a

self-thinking "Idea" for which potentiality is not. And the "Idea" thus championed is regarded as the *basis of advanced religion*, of that religion which has been defined as "philosophy speaking naïvely." It appears to me that this position is not only untenable on *philosophic* grounds, but of no service to *sentiment*, to advanced religion, "natural" or other. On the lines of idealistic Theism, the "Idea" must be the fountain-head of *all*, note it well, *all* cosmic activities. And surely we cannot soberly and honestly worship an "Idea" supposed to ideate cruelties, diseases, obscenities, and all the grim defects of this planet as phases of its complete reality! Is not the sneer of Schopenhauer relevant here? Is the "Idea" that "thinks" the drama of the snake and the squirrel, when something else might be thought, a fit object of reverence? Of a surety Dualism, not an idealistic-Theistic Monism, is the prop of the ordinary religionist.

Had Berkeley—I note one glimpse only in *Siris*, § 257—suspected that consciousness is only a flower on a stem fed by roots in the META-CONSCIOUS, he might have achieved a notable advance on his earlier theory of Matter. After all it is only against vulgar Realism with its re-ified Abstraction "Matter" that his idealist polemic holds good. As against "unperceived objects" alleged to be resisting extensions inhering in a surd "substance," it is decisive enough. But as against such objects viewed as *potential modes of consciousness*, as metaconscious spiritual activities, it is irrelevant. For instance a Nature-philosophy such as that of Schelling may well posit objects that have never yet been, and indeed may never be, mirrored in the consciousness of percipients, and nevertheless maintain its idealism intact. Aristotle (who verges on Absolute Idealism) identifies, it is true, *actual* knowledge with what is known, but he does not for all that make my teapot's whole standing dependent on my passing perceptions. He backs the actual with the potential.¹ Berkeley's error here was to place all movement solely within

¹ If Aristotle's standpoint is to be attained, the distinction between potential existence (*ἐν δυνάμει*) and actual existence (*ἐν ἐνδεχέῃ*, *ἐν ἐνεργείᾳ*) must always be borne in mind. *Actual* knowledge for him coincides with the *thing* known, but, nevertheless, the thing when unknown may possess a potential existence quite independent of our consciousness. It is to be noted, however, that Aristotle does not

consciousness—in the actual—ignoring the alternative that the well-springs of consciousness may be traced to the *Metaconscious*, (whether logically symbolised or otherwise). Hence his belief that his Idealism was to sound the death-knell of Atheism and Scepticism. He destroyed and rightly destroyed the philosophers' "Matter," and showed that an extra-experiential ground of objects, if we are to conceive or even discuss one at all, must be posited as *spiritual*. What he overlooked was the consideration that spiritual activities—the only admissible ground—may be not only conscious but meta or super-conscious. This oversight is sharply rebuked by the subsequent history of philosophy. Thus Schopenhauer is an admirer of Berkeley, is strictly *idealist*, but a votary to all intents and purposes of that very *Atheism* which the Bishop so strenuously sought to overthrow!

So much, then, for the positive metaphysic of Berkeley. Idealism changes its garb with Hume. He is Berkeley *minus* the Divine Mind and the subordinate Egos, professes to view Experience, inner and outer, as a stream of atomistic "perceptions" or states. Locke's old theory of "Relations" is worked out to the bitter end—the current empiricism exploited to the full—a general "loosening" of Reality effected. We may term him an Agnostic Idealist, and note with interest his influence on Kant, which, by the way, extended to other issues than the Causality-problem mentioned by the Königsberg philosopher. The Dryasdusts of university chairs are apt to dwell too exclusively on the more academic phases of Hume's thinking. His contributions to philosophy in general have proved of great value to later writers, including agnostics and metaphysicians alike, classes of thinkers who do not usually drink at the same fountain.

The next step in Idealism we find in Kant. What, in brief, is his standpoint? It is a novel subjective idealism (qualified by a sometimes hesitating acceptance of "things-in-themselves"), allied with a *Thought-Theory* of Experience, vaguely, very vaguely anti-

carry this doctrine of potentiality as far as he might have done, for his Ultimate Creative Intellect or Deity is *actus purus*, completely actual or conscious.

pated by Berkeley (*vide supra*). On Kant's showing, Sensations unified in Space and Time are subsumed under *a priori* Notions or Categories and forthwith emerge as Experience, as that very Real World, back to which the psychologists had traced the sources of knowledge. Empirical realism is taught, for are not objects immediate facts, transcendental idealism, for these facts again are but modes of a knowing consciousness. Experience is constituted by necessary relations, but cannot be transcended. Touching soul, rational cosmic lore and Deity, we must, as speculative reasoners, be agnostic. Still, despite Kant's speculative agnosticism, the germs of a Hegel are here—Categories or Concepts, though not yet worked up into a system, appear as *præ* of Nature and the inner psychological order or "Mind." Kant is puzzled, it is true, when he deals with the *crux* of the rise of sensations, failing which he says, Categories are empty; but the resort to occult Things-in-themselves to account for them is obviously erroneous. On his own showing Causality must not be used transcendently—his Idealism is debarred from flying to surds of this kind. Has he not also proclaimed the need of deducing all reality from a single principle? Eager to demolish the belief in Things-in-themselves and to deduce Reality from the required single principle, uprises Fichte and spins Reality, sensations, space, time, and the categories alike out of Kant's pure Ego now exalted to the rank of an *Absolute Reason* or I as Universal, as the ground of all modes of empirical consciousness. The Absolute Ego posits a non-Ego within itself—reflects itself into itself—makes itself its own object that it may realise its freedom *in concreto*—hence a world and individuals driven by the moral law to abolish this world. Fichte's doctrine of perception is not subjective idealism proper; he places Reality only in the Absolute common Ego. The Things-in-themselves are repudiated, hence Epistemology and Ontology kiss one another. Nature is ideally real, reflects only obstructed activities of this Ego, possesses in fact no show of independent standing. To empirical individuals this Nature necessarily seems foreign, yet, after all, it is but a self-limitation of the Universal Reason revealed in and bottoming them. This solution, plausible in many ways, will not,

however, enable us to rethink science satisfactorily. Ideal-Realism requires an amendment, and Schelling comes forward as propounder of one. Mind and nature, ideal and real, are by him treated as having equal claims to recognition, as sides of an underlying Unity—we have the system of Absolute Identity. Schelling's Absolute, however, is no Spinozist indeterminate Substance, but rather Fichte's Absolute Ego or *Reason*, and of this mind and nature are revelations of coequal standing. One of Schelling's signal merits is his development of the doctrine of "unconscious intelligence" (first prominently espoused by Leibnitz among moderns), which enables him to assert a world-order prior to consciousness and to give Nature generally a free swing without prejudice to idealism. The thing-in-itself *as surd* is no more present here than with Fichte; but besides objects presented in actuality as lit up by consciousness there are to be admitted objects in potentiality as "unripe intelligence." This objective "Real-Idealism" admits that the object may be in itself far richer than the object as mirrored in consciousness, and further views consciousness itself with its ideal and real aspects as emergent in a time-process from Nature. It is in the human brain that Nature first returns fully on herself, "whence it is clear that Nature is primarily identical with that which is realised as consciousness and intelligence." On the side of the latter the "ideal," on that of Nature the "real," aspect of the Absolute Reason is dominant. On these positions hinges that part of Schelling's theory of Perception which has materially influenced his successors. Details and later developments must be omitted. Passing on to Hegel, we note the complete exploitation of the Category-theory of Experience broached by Kant and absorption and amendment of previous idealist standpoints generally, which invite close attention. No one now, I presume, regards either Fichte or Schelling in the light of infallible Masters, however illuminative they may prove, but on the contrary many of our most acute modern thinkers are practically disciples of Hegel. Indeed, Panlogism is viewed by many critics as destined to stand or fall with his system. It may, therefore, prove of interest to dwell at some length on his standpoint and subsequently to indicate in what directions success-

ful amendments of it have been made, or are likely to be made in the future. The first requisite, however, of any advance is full realisation of the stage one has to leave behind. Let me endeavor, therefore, to trace briefly according to my lights the leading causes which seem to have mediated the imposing structure of Hegel. This structure embodies, to my thinking, one of the greatest delusions of philosophy—that of the Concept viewed as *prius*—a theory which has led countless inquirers astray, and justifies in great measure the bitter polemic of a Schopenhauer. Nevertheless, the delusion colors much of ancient, and more still of mediæval and modern speculation. To assail it effectively, one must confront it in its most definite and pronounced form. Hence Hegel's importance for critics. He is nothing, if not a Panlogist, and in assailing him we assail Panlogism in its most ambitious form; in Hegel, in fact, we confront the protagonist of exploiters of the Concept,—of that standpoint which upholds Reason as *prius* of reality. We are all familiar with his amazing grasp of Method and unflinching championship of Reason as “sovereign of the world.” And most of us would probably admit that, if Reason is really sovereign, his system must on all fundamental counts be right. Reason will probably never find a more interesting and methodic champion than Hegel, indeed most philosophic advocates of the sovereignty of Reason view his *Logic*, *Nature-philosophy*, and *Philosophy of Spirit* as in general outlines valid, though they may need, and notably the Nature-philosophy, extensive alterations in the matter of details. Hegel, therefore, is the special objective of those who, like myself, reject reason as *Prius*.

I do not propose here to summarise Hegelianism. The articulation of that system is such as scarcely to admit of a summary. Assuming my readers' conversance with the system, I shall first note very briefly the source of its germinal ideas and then indicate various leading points touching which the Metaphysic of the future must, in my opinion, oppose it.

“Kant's Categories form really the Substance of Hegel” observes Dr. Stirling. And obviously the system would be meaningless to all who have ignored Kant. Categories viewed as logical

articulation of the Idea as timeless *prius* in the "Logic"; categories viewed as externalised in the contingent particularity of Nature (that *ratio mersa et confusa*), categories viewed as realised in the at-one-ment of the Idea with itself as Mind or Spirit—surely these universal thought-forms or notions are indeed the "substance" of Hegel. But the "substance" thus accurately indicated has "modes" which a mere reference to Kant will not, of course, account for. Hegelianism as avowedly a synthesis, the "truth" of a series of varied world-historic standpoints, had to include much more than Kant. And it is here that an illuminative fact crops out. While nominally inclusive of all the standpoints, Hegelianism absorbs some with peculiar relish. Prominent among these are those of Plato and Aristotle. Plato's Universal or *Idea* is no doubt so formal as to be only attained at the cost of sacrificing and really leaving unexplained the concrete spheres of "world" and "mind" we know. But for all that it is a bold, if in many ways, halting attempt to exhibit the concept as *prius*, and on that account specially stimulating to an avid student of Kant such as was Hegel. *Here* in Plato was the inadequately realised but most suggestive endeavor to identify reality with Thought; *there* in Kant's category-doctrine (when amplified and dialectically developed) lay the secret of how the identification was to be effected. The stimulus once given, rationalisation of the entire range of Reality as we have it—to the exclusion of all the old *surds*—became the ambition of the German thinker. "It may be admitted," writes Dr. Stirling, "that there are in Plato partial efforts towards a single plastic element or energy, a single all of thought, whose distinctions were constitutive pairs of fluent notions." And we shall further recall that belief in a *relationship* of notions or concepts, which admits of logical passage from one to the other *without reference to crass fact*, is an undeniable position of Plato. Dialectic as treating of the relations of these notions is also his ontology. The standing of the flux of nature and mind as explained by Hegel was also in part probably suggested by Plato. Categories, the unitary universal notions "realising themselves in multiplicity," as projected into the sphere of crass contingent phenomena, recall the Platonic notions which appear as if

broken into a manifold in their shadowy copies in the sense-world. Much else offers itself for mention, but enough has been said to enable us to enter a preliminary caution. If the headquarters of Hegel lie in Plato, and if, as we know, Plato is *the* philosopher of *abstractionism*, suspicions must arise that the contaminated headwaters have carried their infection far down stream. And these suspicions are to my thinking validated by facts. Great as Plato has been as a stimulus to thought, he is avowedly an abstractionist of the most daring kind, and the *abuse of notions* traceable to him has, I believe, fouled the whole history of philosophy, but most notably that part claiming Hegel and the Hegelians. Let us consider for a moment the genesis of the notion-controversy and realise out of what really trivial antecedents this exaggerated respect for the "labor of the notion" arose. Let us go back to Socrates. In quest of the clarification of men's thoughts with a mainly ethical end,—clear knowledge implying for him virtue,—what did he effect? He did nothing (his personal influence apart) but teach men by way of rigid definition and the "irony" that their *verbal thinking* was confused and that the attainment and use of names with clearly thought applications and implications was imperative. The clarified concepts which he ushered into use came however insensibly and by a natural illusion to seem more real than the particulars to which they referred—*they* were the wheat of reality, the rest was chaff. Hence Plato (with an eye also to reconciling current systems or rather patches of thought) *hypostatized*, and extended them, and finally set up a Dialectic or Ontology touching their "intelligible" relations. Hence again arose the modifications introduced by Aristotle, endless mediæval disputations and the later notion-philosophies, the upshot of which has been the darkening of the problems treated in a manner that has tended to make all metaphysic seem ridiculous, a "splendid folly" as a famous agnostic would put it. There can be little doubt that on the fatal hypostasis of the concept and the preposterous importance attached to concepts generally—an importance which their abstractness should never allow us to overrate—rests the responsibility for most of the existing disgust with metaphysic. In view of the known inadequacy

of *content* of concepts considered in relation to their concrete objects, we ought to require very strong evidence before invoking concepts of *any kind* in plumbing the source of Reality. The danger of mistaking the shadow for the substance is obvious. Concepts of the empirical kind are only of value in so far as they facilitate our grasp of presented or re-presented Reality; they are a delusion and a snare if made ends in themselves and give rise to the word-juggler and schoolman. The "Universals" of the metaphysician must, therefore, be viewed with suspicion at the outset.

The hints gleaned by Hegel from Aristotle were numerous. The timeless Creative Intellect, the "eternally complete" active Reason which is ground, support, and presupposition of thoughts and things, the doctrines of form and matter and drift towards Absolute Idealism, the immanence of Universals in things explanatory of the world-stir (from which Plato's inert Ideas, like epicurean gods, had been clumsily held aloof), the soul as realising essence and "truth" of body, the allocation of a domain to "chance," (as opposed to rational productivity) in the world-order; the view that the higher manifestation may include the lower, and that the last in time may be the metaphysical first, and many other points deserve mention. The Aristotelian doctrine that Universals indwell and energise in things, amending the Platonic view, curiously recalls the post-Kantian treatment of the categories amending the view of Kant—categories being made immanent in, instead of being superimposed on, phenomena. This, however, by the way.

To be aware of the inspiring ideas of any given system, is to have in large part explained it. Any thinker with a long life and ordinary industry is capable of developing his standpoint in the detail, but he does not ordinarily add much to the stock of germinal ideas with which he sets out. Hence the fundamental importance of tracing the pedigree of these ideas. In the case of Hegelianism, the germinal ideas bearing on Panlogism seem to proceed almost wholly out of Plato, Aristotle, Kant, Fichte, and Schelling. And of these masters the two former, at any rate, are both tainted with *formalism*. Not unreasonably, then, should we anticipate that "misleading stress on the abstract universal," with which even Dr.

Stirling charges the Hegelian Logic. The most influential teachers of Greece, more reliable guides in the view of Hegel's contemporaries than they are for us, must have inoculated him effectually with the bias.

Originality, it has been well said, consists in first absorbing other people's thoughts.¹ Hegel's indebtedness to Kant's "Analytic" and "Dialectic," to Fichte's Transcendental deduction and transformation of the categories into conditions of experience posited by Absolute Thinking, to Schelling's objective idealism, potency-scheme, and view of the world-history as revelation of the Absolute, etc., etc., and to Jacob Bohme, is notorious. If he developed much, he received much.* His rehabilitation of *Reason* as against the later mysticism of Schelling, his improvements and striking use of the Dialectical Method, and his attempt to rethink, (and to exhibit the sovereignty of Reason in) all the main departments of Human Experience constitute his striking work. I shall now briefly consider some of the leading objections which bear upon his positions, more especially as interpreted by the conservatives of the Right wing of his school. Space will not allow me to exhaust these objections, but I trust that the defects of treatment which may be observable, will be accompanied by suggestions of compensatory value.

THE PROBLEM OF THEISM.

As interpreted by the Hegelian Right, the Idea is a *conscious* Prius, an intelligible unitary actuality as opposed to a mere potentiality or "initselfness" of subjectivity. We arrive thus at Green's "eternally complete" consciousness; only time-severed patches of the rational whole constituting its content being revealed to us empirical individuals, each of whom, however, reproduces aspects of the rational whole in his mind and comes in time to recognise *explicitly* as rational what was ever *implicitly* this. In the course of this reproduction it "uses the sentient life of the soul as its organ" (Green, *Proleg. to Ethics*). A thinker of this school would,

¹ Professor Nicholson.

no doubt, agree heartily with Schopenhauer's remark, "An impersonal God is no God at all but a misapplied word." And it must, I think, be conceded that a Hegelian who professes a religious conservatism, but declines withal to admit that the Idea as *prius* is conscious, is in an awkward quandary. If one thing is more certain than another, it is the fact that conservative religionists in Europe, rightly or wrongly, require the retention of a *conscious personal* God as the author and sustainer of Reality. An impersonal fontal Reason may do duty as the basis of an Idealistic *Atheism*, but proffered as the philosophical rendering of the Christian's God it is absurd.

There are, however, so-called Hegelian Theists who, while accepting an Impersonal IDEA or REASON as *prius*, profess to find God in the "Absolute Idea," that is to say in the Idea or Reason as realised or *made explicit* in philosophy, art, science, and history as a whole, an unfoldment which is realised in its turn through "finite spirits," such as we. I fail, however, to see in what manner a God of this kind can be regarded as constituting the ideal of the religionist, the man who attends churches, and believes in the efficacy of prayer, and the variety of dogmas embraced under the name of Christianity. But let this pass. I have now merely to point out that such a God cannot be regarded as either infinite or necessarily eternal. Not infinitude but (if I may use the term) indefinitude "foams from the goblet" of a "spirit-empire" realised through individuals. As the "finite spirits" come and go, advance and decline, so, too, must this God wax and wane. He is subject to so low a category as Quantity. However numerous and advanced the "finite spirits" may be, they could always be conceived as more numerous and more advanced, and the "spirit-empire" consequently as susceptible of fuller development. God would, therefore, never *exhaust*, never fully realise in Himself the infinite potentialities of manifestation latent in the Impersonal Reason, would, therefore, be only indefinite, not infinite. And His eternity would be assured only on the supposition that the eternity of the world-process also is assured. A *Maha-pralaya*, such as that of which Hindu mystics dream, would extinguish Him. For clearly a God

who is real only through mediation of "finite spirits" must lose consciousness when the latter lose consciousness.

The theory of a *conscious* fontal Reason is attended with difficulties of another kind. At the outset we must observe that there is no scope for dogmatic assertion in this controversy. Hegelians profess only to explain experience and a Theistic Idealism is merely one among various hypotheses which may serve to explain it. We only know directly our own states of consciousness. The problem is,—Does the reality of this consciousness force us to infer a creative god-consciousness as its ground, or is there a more effective hypothesis forthcoming?

Now I must urge here, as I have already urged elsewhere, that no one individual however exalted serves to explain the origin of other individuals. A conscious God is in virtue of His very self-awareness or consciousness *cut off* from the spheres embraced by the consciousness of other individuals. Even were He conscious of all that of which these other individuals are conscious, He would still remain only the leading monad in a hierarchy of monads. All selves in respect of their bare self-hood are discrete impervious ultimates: We can speak in Hegelian language of a *known* object as "an other which is not another," but not so of an alien *knower*. All Selves are selves "in their own right," though they may greatly further or hinder one another's activities. We must posit, in fact, a principle other than a God-consciousness as ground of ourselves, that is if it is necessary to posit a ground at all.

The Ultimate ground of Reality, it would seem, has to be found in what I have elsewhere termed the Metaconscious, a spiritual activity *ὑπέροσος ὑπέρβας* best discussed as the basis of a monadology. All available clues seem to indicate that consciousness (i. e., spiritual activity under the form of self-awareness) is a *posterius*, never a *prius*, that, in fact, the actual is only a star-point visible against the dark background of the potential. Consciousness has a very limited range; its content streams ever out of potentiality into actuality; only the veriest fragment of our experiences, perceptual and mental, is present to us at any given moment, while perception itself is possible only in virtue of associated ideas

of *unrealised* sensations. In fact, reflexion on the features of our individual experience—the *datum* on which metaphysic necessarily founds—makes for the theory of the Metaconscious. Consciousness, the actual, is the flower, not the root.

One would like, on the Theistic assumption, to have one more riddle answered. If God is held to be source of my consciousness, how can it be urged that He was complete before my rise? It would be absurd to hold that my *consciousness* was suspended in his "eternally complete" consciousness without my being aware of the fact. Here at least, then, potentiality would seem to eclipse actuality, here a conscious God is eternal along with a somewhat that was once not conscious at all. I at least became conscious in time. Did I then spring from a metaconscious ground of which God knew naught?

It is hard that Conservatism should reap no harvest. But the uselessness even to Theology of this Hegelian Theism is well pointed out by Mr. Balfour, "Neither the combining Principle alone, nor the combining principle considered in its union with the multiplicity which it combines, can satisfy the requirements of an effectual Theology. Not the first, because it is a barren abstraction, not the second, because in its all-inclusive universality it holds in suspension, without preference and without repulsion, every element alike of the knowable world. Of these none, whatever be its nature, be it good or bad, base or noble, can be considered as alien to the Absolute; all are necessary and all are characteristic." The worthlessness of this Theism to the average worshipper will be, perhaps, still more vividly realised when it is remembered that Hegel viewed religion as God's self-consciousness,¹ and that such atrocious cults as the religions of the Syrians and Phoenicians, the so-called "religions of pain," figure as moments of the dialectic of religions (culminating in the absolute religion or Christianity). Can we wonder that some writers have used angry words in discussing Hegelianism? Can we be seriously asked to worship a Being who unfolds

¹ Religion = "the knowledge which the Divine Spirit has of himself through the mediation of the finite spirit." (Hegel.)

His "eternal essence" in a time-process which yields the abominations of Moloch and Adonis, to ignore more primitive and in some cases even more cruel cults? Can the clerics of the "Absolute Religion" honestly inculcate a "philosophical Theism" which embraces this monstrous view? We may, however, press the point further and contend that *all idealistic Theisms alike are unsatisfactory*. On the shoulders of a Deity, *who is sole prius*, rests the responsibility for every event which our moral judgment deplures. Every iniquity of man, for instance, must in consistency be traced back to this Deity, for what for such a Theism are individuals but His manifestations? We cannot see in a Nero anything but a phase of his activity. "Un être qui a tout reçu, ne peut agir que par ce que lui a été donné, et toute la puissance divine qui est infinie, ne saurait le rendre indépendant," runs a passage culled by Schopenhauer from Vauvenarques and the passage is singularly relevant. The advance of ethical ideals must render such a Theism unwelcome, if not objectionable. The philosophy which professes to "rethink" Christianity on conservative lines such as these will one day be viewed as an imposture.

THE PROBLEM OF THE RATIONALITY OF THE PRIUS.

Whether the prius is or is not conscious is after all a matter of debate even among Hegelians. All, however, of these latter who have any real claim to their title contend for its *rationality*, and no student of Hegel can doubt *his* view for a moment. Now this exaltation of Reason stands for the culmination of the formalist Platonic movement already noticed. A unity of intelligible categories is discussed as timeless *prius*, the logical articulation of its moments being painfully demonstrated. In this dialectical process we confront, so it is said, the "pure reason"—God in his eternal essence as ground of reality. And in these categories we have to note the Idea-determinations which underlie nature and the individual mind, viewing them in a dry light abstracted from the multiplicity and confusion in which they appear in actual experience. A masterly ambition, this Logic; a masterly Method, too, it would seem, this method of the "self-explicating Idea," carrying us from category

to category with an oily, if painful, sureness. But now that we have plumbed the riddle of the Idea as *prius* let us away to the concrete of Nature and mind. And what do we find? That the Reason into whose very movement we had seemed to enter, now often plainly avails us nothing. We cite pessimists galore who point to the interminable failures, abominations, and torments of this world, and are told in reply that these evils are mostly necessary to bring out the full glory of the godhead of the Idea. But some evils at least are utterly indefensible on any such teleologic lines; so Hegelians call in an ally and eke out Reason by aid of the sound "contingency." No one, however, is able to say *how* Reason, the all-sufficient *prius*, founded a world of "contingent" particularity which so often suggests unreason, but that for Hegelians is a trifle. Suffice it, they urge, that we are able to detect the presence of Reason here and there in the turmoil. We are to trust to the wisdom of the Idea that the potter will make eventually for good—the good *of the Idea*. Of a truth Nature on the showing even of advocates of the IDEA is a very bad exemplification of Reason. To cite Schwegler's description of the Hegelian Nature, that amazing output of Rationality: "Nature is a Bacchantic God, uncontrolled by, and unconscious of, himself. It offers, then, *no example* of an intelligibly articulated, continuously ascendant gradation. On the contrary, it everywhere mingles and confounds the essential limits by intermediate and spurious products which perpetually furnish instances in contradiction of every fixed classification. In consequence of this impotence on the part of nature to hold fast the moments of the notion, the philosophy of nature is constantly compelled, as it were, to capitulate between the world of the concrete individual products and the regulative of the speculative idea" (*History of Philosophy*, translated by Hutchison Stirling. Eighth edition. Page 332). Seeing that the Idea as *prius* is viewed as *pure reason* and nothing else, and further as *in no way exhausted* by its manifestation as Nature, we must be at a loss to account for the above extraordinary output. And our perplexity is increased when we reach the sphere of "Philosophy of Mind" or Spirit—the very inquiry which, treating of the regress of the Idea into itself, might be ex-

pected to shatter scepticism. It would puzzle even a sophist to exhibit the domains of (what Hegel discusses under) "Anthropology," "Phenomenology," and "Psychology" as of purely rational import. So-called "Objective Reason," again, as realised in the State, etc., would be often much more appropriately dubbed unreason. At its best it is only an imperfect result of innumerable faulty tentatives. And even in the vaunted history of philosophy itself the Categories of Reason show but poorly. There are apparent "distortions in time," big gaps, etc., on the admission of Hegel and of his own supporters, the deftest manipulations of data notwithstanding. Here again phenomenal "contingency" destroys all hope of any concrete vindication of what logic—rightly held the "realm of shadows"—has established. Yet Logic pretends to discuss the *Prius* of that very contingency and believes itself to have done so satisfactorily. We can appreciate now the indignation of Schopenhauer, and the sneers of Schelling and von Hartmann. When unravelling the real ongoings of the real world and of the minds of those conceived as in it, the so-called labor of the "Notion" or "Concept" only fools us. It is simply inadequate to the mere facts—is a product of the study suitable for stuffy class-rooms but unable to thrive under the open sky of concrete reality. It no more displays the workshop of this reality than do printed words in a geography-primer the actual geologic origin of the countries discussed. Truth to tell, the assumption that the source of reality must be Intellect ("Idea"), the articulation of which can be shown in a book, is an absurd relic of Platonic dialectics and Scholasticism which but for the dexterity of one or two German writers would long since have been discarded.

But if Categories, Notions, or Concepts of the Metaphysical kind make so strange a show, why in the name of common sense, it will be asked, were they ever assumed at all? How are they seized in the first instance—the problems of relating them in a Logic, etc., apart? Here we come to an important issue, an issue which enables us to clear the ground grandly. The answer, of course, of Hegelians would be—no such categories, no experience, inner and outer, mental and perceptual, such as we actually have. This be-

ing so, I will first take the case of *Objects*, of "outer" experience and contend that the objectivation of this latter in no way requires us to assume such categories. In other words, Categories, as devices invented to help us to explain the riddle of External Perception, are superfluous. We can explain that portion of the riddle, which they seem to explain, otherwise.

Take the alleged *Category Being*—is it requisite as most simple of the thought-determinations said to "constitute" the object? I reply, it is wholly superfluous; Being in the object is not a thought but a sensation, not a category, pure concept or universal, but a name for the feeling of *self-opposition* (Behmen's contrariety), whereby the subject becomes conscious.¹

The idea of this *sensation* abstracted from the ideas of the other sensations along with which it is had, and fixed by a name becomes in the process a concept. The Subject does not "*think*" its states as existent under a metaphysical or "*transcendental*" concept and so constitute a rudimentarily objective world, but it derives the *empirical* concept "*Being*" from a *felt* world, with the production of which concepts had nothing to do,—the production being due to a super-rational activity in no way resembling intellect. The new Monadism, the quarter in which I believe the true explanation of External Perception to lie, has no need to invent transcendental concepts to account for knowledge. It declares that there are no concepts whatever in things until by "taking together" (con-ceiving) the agreeing phases of the things, we generate them and *then place them* at our leisure in the selfsame things.

There is, in fact, a *native objectivity* in sensation arising from its mode of production, the rushing of the Ego or Subject into manifestation. I am glad to find myself partly in agreement with Mr. Belfort Bax on this count. He, too, though a Categorist, dismisses Being as "alogical," but he does not, I venture to think, yet realise what this important rejection means. It means the concession to the presentation-continuum of that precious objectivity

¹ Jacob Behmen's "doctrine of contrariety" as essential to consciousness, and Fichte's view of the Non-Ego as an output of the Ego, which thereby determines or makes definite itself, may be usefully studied in this connexion.

which is the one element requisite for the success of Associationism in this quarter. Mr. Bax says: "The universal and necessary element which all reality involves is clearly thought into the object. Yet although thought into the object, it is clearly not thought into it by the individual mind, since the latter finds it already given in the object" (*Problem of Reality*, p. 17), and preserves categories, such as Causality and Substance, despite his objection to Being. But surely, Being once conceded to the enemy, the case for the other categories is lost. Association will suffice to round off a crudely into a fully objective world, and that the more easily as inherited ancestral experiences facilitate its task. As I have urged elsewhere: "Not categories, but cerebral monads mediate the fuller objectivation of sensation into the ripe world we know; their activities being passively duplicated in the Subject [central monad] as the infant consciousness dawns. *Nerves and brain wire pull the adjustments of organism to surroundings, and the reflex of this adjustive mechanism in the subject is the very process of the fuller objectivation itself.*"¹ Seeing that for Mr. Bax consciousness viewed from the physical standpoint is "cerebral matter in motion" and arises with the organism in time, he might find the above view not wholly valueless, friendly though it is to Monadism. It is satisfactory, however, to be in a position to assert that my particular form of Monadism admits of inductive proof, a proof which can be readily adduced if required. Indeed, saving certain effective supplementary arguments yet to be inserted, this proof has been already submitted to the critics. It is well that I should ward off misrepresentation in thus treating of the categories. I was recently taken to task by a careless and I fear not too conscientious critic for insisting in one part of my *Riddle* on psychical atomism and in other parts attacking it. "You cannot," urged this worthy, "get universal connexion out of particulars in which it was not, but, as Mr. Fawcett shows, there are no such particulars in experience (p. 90), and all that science can do is to clear and make systematic a connexion present from the first in every associative conjunction. If therefore (p. 182) the

¹*Riddle of the Universe*, p. 337.

author accepts Mr. Bradley's rejection of atomism he can hardly have understood it. Particulars out of connexion *are* psychical atoms." The critic has not cared to think out the standpoint he so glibly assails. I reject, of course, as a Monadist, all show of psychical atomism proffered as explanatory of my own consciousness, but I equally reject what seem to me those phantoms of the study, those modernised verbal Universals known as "categories." What I posit is a presentation-continuum, the "wholeness" of which reveals the unity of the monad that evolves it. From this whole I maintain that we can derive universals and particulars alike; integration and differentiation of its *aspects* by way of their mutual furtherance and hindrance furnishing the clue. Physiological psychology taken over and made adequate by Monadism enables us to dispense with the category. It should be evident that this view excludes belief in primitive unrelated particulars. All modes of experience are related as modes of a unitary self-revelatory monad. The error of Hegelians is their view of "relations" as the realisation of "Universals" somehow different in kind from the "related terms." I will return to this matter anon.

Let me now glance briefly at the well-known Category of Causality as impugned and set aside by the new Monadism.

What is the pre-Hegelian history of this Category? It is this. Hume in the first place resolved experience into primitively unrelated particulars—shook the whole fabric loose. A causal sequence for him was a time-sequence, the terms of which *seem* to hang necessarily together owing to association. Causality is derivative from our experience of "constant conjunctions" and then thrust, as it were, illusively on some special conjunction. But Kant changes all this. He argues in effect—no causality latent as *pure concept*, no experience of the conjunctions in question at all. It is by way of subsumption under the Category (or rather its *schema*) that determinations of phenomena, i. e., space and time ordered sensations, become objective, universally, and necessarily externalised phases of a real perceptual world. The category minus the phenomena is empty, but the phenomena minus the category are blind. This is the Thought-Theory of Experience, and at first

sight it certainly does seem attractive. But analysis reveals a grave blemish. It was supposed that the Category carried with it a necessity that recemented the fragments into which Experience had fallen for Hume. But see—Kant posits “phenomena” as material for the work of the category. How comes this material into the shape it bears ere it is “subsumed” under the Category. Aye, there’s the rub. A is followed by B, and into this *given sequence* the category reads Necessity.¹ But what of the origination of the terms of the sequence thus treated? Why was A presented along with B in this order? Kant cannot tell us. To say that sensations or “representations” are intuited in a Time-Form is in no way to account for the *detailed order* in which they appear. To explain that order we must surely fall back on the activity conceded to the “transcendental” objects or things-in-themselves. And may not a contingency of at any rate considerable import obtain here? May not the “transcendental objects” or *causa φαινομενῶν* produce our sensations at random now and then? If so, what is to prevent “Causality” from bestowing a necessary relation on terms arbitrarily, and, may be, contingently originated? Superimposed necessity is a farce. Kant, in short, has on this count failed to confute Hume. Hume’s Causality is of *Empirical* origin, the child of “Association”; Kant’s is an *a priori* condition of experience, but both these kinds of Causality alike presuppose *relatable terms*, in the origination of which contingency may well obtain. The net of the Category is only thrown over two or more terms that happen to have bobbed up in a certain order.

Hegel and others seem to have recognised this as well as other defects of Kant’s theory of Categories. Hence Causality is again revised. It is now made immanent or implicit in phenomena (tardily though we empirical individuals may come to detect it). But in this novel scheme Kant’s standpoint is practically abandoned. Kant had clearly started with a wish to exhibit *multiple* phenomena as somehow thrown at the Ego and then rallied into order by sub-

¹ This inreading is, also, most notably prominent in the case of the so-called categories of *Quantity* and *Quality*.

sumption under a *unitary pure* concept.¹ But when Causality is viewed as immanent in the phenomena at the start, it loses its Kantian standing, being transmuted into the extraordinary fiction of a Concept as *multiple* and *impure* as there are phenomena "realising" it! Kant's mere *function* of the "Transcendental Judgment," designed simply to account for the way in which we "think" given phenomena, is superseded by a *Logical Realism* which has to account for the phenomena themselves. The Concept in the *Critique* idly related what was *brought to it*—now it *energises and manifests in things*. Is this alleged advance on Kant worth penning? The Category in the form in which Kant championed it will not pass muster—has it profited by taking on a new form? Is it easier to understand how B follows A, always and unconditionally, just because a mere Concept is held to relate them immanently? The supposition may be impeached on two main counts: (1) Concepts of the empirical kind which are alone generally admitted are not *dynamic*; why, then, is a transcendental concept to be gratuitously supposed dynamic? Surely if Reason is found incompetent to account for the movement of Reality, as a whole, specially incompetent is this wretched concept Causality to account for the *nisus* behind the myriads of caused events in this world. The dynamics of Reality were doubtless incorrectly fathered by Schopenhauer upon "Will"—an abstraction as empty as is Reason—but his indictment of Hegelian rationalism holds none the less valid for that. (2) The seething *complexity* and *multiplicity*, the wealth of *qualitative variety*, which mark Nature raise further difficulties. On the Hegelian supposition that the *prius* is pure Reason, articulated as in the Logic, the only way of accounting for Nature is to view it as the categories of this pure Reason made concrete, "realising themselves in multiplicity" as the phrase goes. I would as lief try to create a flesh-and-blood man out of a shadow as spin Nature out of such figments. Causality, of course, is made to

¹ The categories, observes Kant, are "nothing but the conditions of thinking in possible experience" in the same way as space and time are conditions of the phenomena which get "subsumed" under these categories.

play its part, the IDEA "thinking" innumerable cases of sequence as causal. It is forgotten that the important thing after all is *not that events are, or may be, related "causally" in the "thought" of the "Idea," or of you and me, but that they occur.* The bare occurrence is the point of moment and this occurrence could be effected as well by a *super-rational* Prius as by a rational one such as Hegel's.

This problem of the bare occurrence is, of course, of a piece with that touching the source of "sensation" (the alogical so called) as a whole. To squeeze "sensation" out of Concepts is as impracticable as to derive Nature from Plato's bloodless Universals. I may, however, be asked: "have you, then, any satisfactory theory to proffer?" It is not, however, my business here to construct, but to criticise. I will therefore simply say that in my humble opinion the solution of the riddle of sensations must be sought by way of study of the dynamics of Monads; Monadism incorporating, while interpreting, whatever physiological psychology has to say.

Some way back I was contending that psychical atomism has no necessary connexion with repudiation of Hegelian Universals. And now I must add that "Relations" *where truly primitive* need in no way be *specially* exalted as "Thought." There are, in fact, sensations of relation—"transitive parts" of the stream of consciousness to adopt Professor James's phrase—as well as the ordinary recognised sensations or "substantive parts"; both transitive and substantive parts being aspects only of a Monad. The Relations puzzling the Categorist and treated by him in such absurdly heroic fashion are no "Intelligible" orderers of the manifold, but "sensible" phases of the latter on an equal footing with other phases. As such they are *particular* themselves—that is when we dig them out of their context and come to consider them abstractly. And all particulars (as universals) are products of this later abstraction.

Categories, then, in one domain are superfluous, are relics of Logical Realism. If we could not explain External Perception without them, reconsideration of the group would be requisite—but we can. So far so good. But the Dialectic is a chain which cannot afford to have one weak link. Along with rejection of categories in the realm of Nature and Sense must go rejection of those cate-

gories supposed to interpret Nature and Sense. Dialectic cannot begin abruptly where we think about the world we perceive. No longer, for instance, need we view physical science as the "discovery by the human mind of thoughts that are objective in sensible things"—*provided that "thoughts" here mean Concepts made concrete.* The so-called "laws" of nature present no difficulty. They are verbal generalities, and of some, e. g., the first law of Motion, it cannot be said that phenomena exemplify them sensibly at all. Science, indeed, as a whole does not mirror concrete aspects of the concrete given Real, but stands for a conceptual transformation of this Real, wherein names and symbols predominate. Its Generalities only indicate the likenesses and unlikenesses of minor generalities, "outer" facts or "inner" ideas and feelings viewed in aspects mostly relative to our interests, practical, and other. They leave the problem of the *power behind the facts* untouched. They are necessarily inadequate even to the facts and apt to cheat the book-lover with the merest shadow of knowledge.

Touching the rise and growth of intellect, Monadism must again be invoked. But nothing useful can be done unless physiological psychology and evolutionist biology are first called in. It seems clear that the opinion of Schopenhauer is justified by the advance of science. Intellect uprose primarily as servant to the organism, and was conditioned wholly by its needs. Knowledge pursued as end-in-itself is now familiar, but stands for a late stage in the self-assertion of the central monads. Interests, too, rule here, and we note the *absence of uniform logical order* in the modes of self-realisation of these monads. The bearing of Monadism on the standing and development of "Reason" (or rather of those modes of co-ordination of states of consciousness embraced under this general name), is necessarily of high interest and all conclusions of ordinary research, biologic and other, must be overhauled by it previous to adoption. Ordinary science, where really a study of "phenomena," and not, as is so very often the case, an unconscious and blundering Metaphysic as well, deals with surfaces; monadism with the veiled activities which seethe beneath these surfaces. How penetration below these latter is possible I have shown at

length elsewhere;¹ here I must simply reiterate my conviction that the inquiry is both feasible and of leading significance.

A word more on Dialectic, the supposed "method of the self-explicating Idea" as echoed in human thinking at its maturity. The self-diremption and self-movement of the concept is its presupposition. Let us place our fingers on the fallacy underlying it. Dr. Stirling has a doubt as to the validity even of the *Logic*. "If the start be but an artifice and a convenience, is it at all ascertained that the means of progress, the dialectic, is any respect better?" Now we may at once vindicate this timely doubt. The truth is that the contradictory moments discerned within concepts—"the knowledge of opposites is one"—are not products of their self-diremption at all. Contrariwise the moments were otherwise posited and merely suspended together by us *in and as* the concepts. In other words, the alleged self-movement or "labor of the Notion" is an illusion; the true movement is ascribable to the primitive non-conceptual phenomena, "outer" and "inner," aspects of which concepts merely indicate. *It is just this flux, stir, and life in phenomena that constitute the real CRUX of Metaphysic.* And here, again, I would suggest that recourse to Monadism is imperative. The seemingly energising concept is an impostor credited with the energy of the phenomena it grew from.

The two-sidedness *at least* of cognitions is generally admitted. It is no special privilege of Dialectic to maintain that A is only A in virtue of not being B, etc. Thus even empiricists may agree with Bain when he urges that the two sides of consciousness "mutually constitute each other." Such views do not further adoption of conceptual dialectic as the world-secret; they have other uses also. A is certainly B *in so far* as B makes it A. Any given mode of consciousness is differently realised in different relations. But between this contention, and the contention that concepts by self-negation, etc., run a universe, yawns a gulf hard to cross.

¹ Cf. *Riddle of the Universe*, Part II., Chapter IV. and V., and elsewhere.

And now there must be noted another leading objection to certain current statements of idealism, including panlogism—to their swamping of the individual subject or monad in the interests of a supposed unitary subject of consciousness “in general.” With Hegel the Idea as *prius* is a Unitary pure reason; with others who sympathise with him in a manner the *prius* is equally a unitary subject of consciousness in which numerical differences, such as empirical subjectivities exhibit, are lost. Thus Mr. Bax urges that “we instinctively feel that the that in us which distinguishes between the object self [mental order] and the object not-self is the subject of consciousness-in-general of which self and not-self are the determinations.”¹ I am afraid that this alleged instinct is an endowment of certain philosophers misled by the worship of Universals. Doctors, however, disagreeing, we must fall back on Experience. And Experience acquaints us with states only of our own consciousness, i. e., ourselves. It is doubtless convenient to “deduce” individuals from a Subject (logical, superlogical, etc.) in which multiplicity is not; but the deduction, like other feats of the Speculative Method, smells of the study. Say what one will, the fact remains that “selves” or monads as partially revealed in our experiences are “impervious,” that the I-glow, the individuality of the individual is self-positing and recognised by men, with no system to uphold, as such. The name subject-in-general may indicate a genuine potentiality or background, but whether we admit the latter or not, we must at any rate admit multiple selves. “If the words ‘self,’ ‘ego,’ I, are to be used intelligibly at all they must mean whatever else they do or do not mean a ‘somewhat’ which is self-distinguished not only from every other knowable object, but also from every other possible self” (A. J. Balfour). Here the multiplicity or monad-view stands to its adversary as does fact to problematical inference. Of a merely monistic ground we know and can know nothing; but in our individual monads we the conscious thinkers are rooted. I have argued, however, elsewhere, that the

¹ *Problem of Reality*, p. 87.

truth lies in a monistic monadism wherein both sides of the controversy receive recognition. On these lines the ultimate ground of consciousness is not a mere *Unity*, but a *Unity-Plurality* in which all possible numerical diversity is latent or implicit. The individual, in respect of his bare individuality, at any rate, is an *educt* not a *product*. To say that number obtains *explicitly* only in the sphere of the empirical is correct, and were Mr. Bax and his sympathisers to confine themselves to upholding this view, no one need quarrel with them. But the diversity that we know as *explicit* presupposes a ground in which it was *implicit*; otherwise it could not appear at all. It is a prominent Hegelian contention that there is no "appearance" without an "essence" and no "essence" that cannot become "appearance." The admission, while valid, is embarrassing. The "appearance" of numerical diversity in individuals must in consistency be viewed as explication or revelation of numerical diversity in the "essence"—the Universal Subject or Spirit. A merely Unitary Subject could not *unfold itself* into a diversity that it never possessed!

To those who dread the unreality of the "labor of the notion," a labor that yields chronic diseases of language, the very name of Metaphysic is apt to prove obnoxious. But to condemn Metaphysic on account of the vagaries of some of its exponents is unwise. And after all, most of us, man of science and votary of common sense alike, are metaphysicians in practice and it remains, therefore, only to determine the best way of organising and testing seemingly inevitable thoughts. The "complete" Inductive Method of Mill may be heartily commended as an instrument for effecting this latter end; the superstition that it is only suitable for ordinary physical and psychological research being dispelled by the results to which it may be shown to lead us. But, be our method what it may, we must at least take care not to misstate the riddle of the Experience we have to solve. Experience, let me repeat, is silent as to the Subject "in general"; it reveals "selves" as discrete, the individuality of the individual as self-positing. This supreme fact must not be ignored. *Δις καὶ τρις τὸ καλόν*—I am the reality I am aware of, the world is *my* presentment in even a stricter sense than that intended

by Schopenhauer.¹ Of course the idealistic solution of External Perception—the reply to the question how and why is my sense-consciousness produced as I have it—involves inquiries into the ongoings of other monads, but of these ongoings our knowledge must be indirect.

Such, then, are some of the objections which bear, or seem to bear, severely on Hegelianism. All could without doubt be extensively elaborated, and more especially the pessimist indictment of panlogism could be drawn up with far greater effect. The force of this latter in the sphere of "Nature-philosophy" and in that of Hegel's "Objective Reason" in "Philosophy of Mind" is indeed overwhelming. The systems of Schopenhauer and von Hartmann, if too one-sided, are themselves witnesses to the incompetence of panlogism when it descends from the Olympus of Logic into the Hades of actual fact. Much embodied in these systems is unanswerable on current idealist lines and calls for the radical reconstitution of metaphysic. That reconstitution, I believe, and elsewhere I have endeavored to make good my assertion, can only be achieved by abjuring Reason as *prius*, and resorting to a super-logical, consciousnessless, but spiritual, spontaneity—to a *monistic monadology*. It seems probable that in this event many of the riddles of this world, pessimism, the ethical problem, the import of the individual, and so forth, might ultimately come to wear a far more encouraging aspect than they do now.

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Having dealt with the Hegelian panlogism, I take this opportunity of passing some remarks on the "form of panlogism" espoused by the editor of this magazine, and expounded in its general outlines in his lucid and compact *Primer of Philosophy*. Space

¹Schopenhauer, despite his Inductive standpoint, tends to cling to a "Universal" better suited to abstractionists and notion-philosophers—tends to strip his WILL of all inner multiplicity. Yet he very strangely says, "all proper and true existence obtains *only in the individual* . . . this immeasurable outer world has its existence *only in the consciousness* of knowing beings and is consequently *bound up with the existence of individuals which are its bearers*." *Selected Essays*, E. B. Bax, p. 177. Why, then, ground these individuals in a mere unitary Will?

will compel me to consider only its broadest features, and also to ignore many of the points, touching which I am in hearty accord with its author.

Dr. Carus combines a bold empiricism with a quite Hegelian recognition of a World-Reason as the *prius* of mere human perceiving, feeling, and reasoning. Indeed, he strives after "a critical reconciliation of rival philosophies of the type of Kantian *apriorism* and John Stuart Mill's empiricism." All our knowledge flows from experience, but Reason—an "objective" or World-Reason, not "subjective" innate concepts or the like—is the source of this experience and the universality and necessity detected in the relational or formal aspects even of sensations are to be cited, he thinks, in proof of this view. Needless to say that Mill's associationism is a bar to the reconciliation favored by Dr. Carus; hence the latter's treatment of the question of "formal thought" is notably antagonistic to the standpoint of the famous British empiricist. But there is no reason whatever why a thoroughgoing Empiricism should not, with certain modifications, be made perfectly consonant with an Absolute Idealism or Rationalism. Aristotle, who, if not an Absolute Idealist, was well-nigh one,¹ was at the same time an empiricist in so far as the problem of the origin of *human* knowledge in time was concerned.

But though Dr. Carus agrees with Hegel in the belief that Reason is sole *prius*, he is in no way inclined to favor the artificiality of that thinker and his repudiation of the Dialectical Method is obvious from the remark that "the inmost nature of reason is *consistency*, and thus the simplest statement of rational thought is the maxim of sameness formulated in logic in the sentence $A = A$ " (p. 109). Rejecting the Dialectical Method, he rejects apparently with it all hope of *articulating* the rationality immanent in the world-order, the leading ambition, without question, of Hegel. Indeed, failing some such method, I do not see how the attempt would be feasible. Even if, as Dr. Carus urges, "human reason is

¹ "Well-nigh;" because his *ὄλγ* or "matter" remains in the last analysis a *surd*, never wholly resolved into the *IDEA* or "form."

only the reflexion of the world-reason" (p. 117), we are still at a loss to understand how *immanent necessity and connexion* obtain between the moments of this World-Reason, and why it should actually unfold itself just as it does. We must take the unfolding, it appears, as an ultimate fact and abandon all attempts to pen a Logic which shall be one with Ontology.

But here I must advance a criticism which seems to me to possess much force. How does Dr. Carus, lacking a Dialectical Method, know that the World-Spirit which reflects itself in us is *really rational at all*? The Universality and necessity alleged to pervade experience may surely be witnesses not to the mere rationality of the world, but to the workings of a *supra-rational*, spiritual Power? Remember "reflexions" are often of a very faint and misleading character. And it will scarcely be urged that we men, who are not so very far removed from the animals, furnish a *reflecting surface* in any way adequate to the activities of an alleged World-Spirit? May not the processes we term "reason" be merely a transient phase of our becoming—a wretchedly faint reflexion of spiritual activities such as altogether transcend reason? The moonlight reflected at midnight by a murky pool is no worthy representative of the splendor of the sun which is the original source of the light. And poor human reason, I take it, is no worthy representative of the splendor of that *supra-rational* spiritual sun which I have elsewhere termed the Metaconscious. Anyhow the supposition is worth considering.

Dr. Carus terms his standpoint a "monistic positivism," and very properly contrasts it with the mere agnostic positivism of Comte and Littré. He also justly assails the pernicious *ignorabimus* of modern agnostics in general. "The philosophy of these latter days is indeed like a ship run aground. Her helmsmen themselves have declared that further headway is impossible; that philosophical problems in their very nature are insoluble." For "philosophical" I should prefer to write "metaphysical" or "fundamental" problems. Philosophy is flourishing well enough in these latter days, but metaphysic until recently has certainly been at a discount. Still we have a stalwart, if small, crew of metaphysicians

to man the ship even as things stand,—are not the followers of the Germans from Fichte down to Von Hartmann of some account? The Oriental metaphysicians, also, have their followers. But undoubtedly the agnostics and indifferentists poll by far the biggest vote, and I agree with Dr. Carus that the fact is in almost every way to be deplored.

The *New Positivism* represents the excellent principle "that all knowledge, scientific, philosophical, and religious, is a description of facts." "Laws" and concepts merely refer us to aspects—qualitative, quantitative, etc.—of the concrete real. "The natural processes themselves are reality." Exactly. *Monism*, it is urged, is the unitary conception of the world, explaining all facts as phases only of one principle, and opposed to the *Henism* which tries to explain facts by way of some one-sided agency, "matter," etc., borrowed from them. The true explanation must include all facts and not give undue preference to any abstractly viewed set of them. With this I am in hearty accord. But the question arises whether such a Monism is adequate to the situation. The world exhibits not only unity but diversity and we must surely not allow the diversity to be ignored when we discuss the *Prius*. Indeed, the all but universal struggle for existence suggests discreteness as well as unity as present in the all-evolving World-Spirit, and it is a *monistic monadology* that I would venture, accordingly, to proffer as the explanation most adequate to the situation. A mere unitary Principle is by implication without the germs whence sprout the *Many*. And let me add that the Experience on which Dr. Carus lays such stress invariably exhibits us to ourselves as impervious, self-contained centres of consciousness. However, I have dealt with this point previously.

Dr. Carus holds that the truth of a philosophy may be vindicated by its ethics; by the fact "that people can live according to the maxims derived therefrom." Surely this view validates the most conflicting standpoints of Asiatic and European philosophy, all of which cannot be true since on the author's own showing, the "inmost nature" of reason is *consistency*! But waiving this point, I pass on to the ethical ideal which Dr. Carus derives from "sys-

tematised *facts*," to-wit Meliorism. Now Meliorism, of course, is not pessimism; nor again is it a modified optimism. In fact we are told, "That life has *no value in itself*; life is an opportunity for creating values. Life gains in value the more we fill it with *worthy actions*." Meliorism says that it is only prosecution of a moral end that makes life "*worth living*" (p. 6). This devotion to duty is exactly the ideal which inspired the ethics of Fichte, nay, which caused him to represent God as the "moral end" of the universe, as the Absolute Ego triumphant over the non-Ego of its own making. But let us consider this ideal in the present regard.

Turning to page 22 I read, "Errors are children of the mind. There is *neither good nor bad, neither right nor wrong, neither truth nor falsehood except in mentality*." For what then ought the Meliorist to sacrifice himself when he undertakes, let us say, to advocate some great reform which will advance the civilisation of the future, a lofty ideal if ever there was one? For his fellows? Certainly not. Dr. Carus assures us that "progress is accompanied with increased sensibility to pain, so that the average happiness is not increased even by the greatest advance of civilisation" (p. 6). For what then? For the "moral end" of the universe as Fichte would have said? Certainly not, for right and wrong, good and bad, *only exist in our mentality*. It appears, then, that the Meliorist is sacrificing himself merely to a figment of his own imagination, a barren thankless ideal of his own making. Self-sacrifice for the humanity of the future *when that humanity cannot benefit by the act* and there is no moral ideal beyond our own minds to take account of, is surely a huge mistake? Why labor to no purpose? For my part, were I a meliorist in theory, I am afraid that I should prove a very sorry *décadent* in practice!

Meliorism is said to found on "*systematised facts*," but where, I ask, are the facts? Is it true that life has *no value in itself*, are there no enjoyments which merit the name, no intellectual pursuits which are attractive enough to be *ends-in-themselves*? Again, life is said to be merely a chance for creating values? But values *for whom*? For ourselves and fellows? No: for meliorism does not find the value of life in reaping pleasures. Nevertheless, a "value"

that does not relieve pain or produce, or tend to produce, pleasure is a thing which I for one confess myself at a loss to understand. The term, in fact, seems meaningless. And similarly the expression "worthy actions" puzzles me. If there is no right outside human minds, and if the giving of pleasures and removal of pains are not the test of worth, what is the meaning of the expression at all? What is the standard of comparison by which all men alike will be content to measure "worth"? To me the only available standard seems utility and this consideration imports, of course, calculations touching the assessment of pleasures and pains.

Very serious in its bearing on morality is Dr. Carus's attitude touching the soul. He views soul and body as inseparable, as abstracts from the same reality. That is to say the activities which to other sentient beings appear as certain cerebral functions are for me my own conscious life; neurosis and psychosis are two sides of one and the same process. Well: this view implies the extinction of my consciousness at death; for the neurosis is then at an end and there is no psychosis separable from a neurosis. Now, I hold with Renan that the loss of the belief in immortality must enervate the morality of, at any rate, the ordinary man. Unless we are to persist consciously after death and that too with a prospect of happiness, it really does seem absurd to worry ourselves with arduous moral efforts here and now. Unless the higher phases of self-culture and altruism are to bear rich fruit for ourselves AND OTHERS in another life or lives, I fail entirely to see why we should vex ourselves here with ceaseless strivings and strugglings, when the cozy nooks of degeneration lie open to us. I am aware that Dr. Carus holds that "true religion is based upon the immortality of the soul" (p. 189), but what is the immortality in which he believes? A mockery in all seriousness! It cannot be that he refers to our *conscious* existence after death, because the body is destined to perish, and body and soul, he asserts, are inseparable. "Christ is actually a living presence in [European] humanity," he urges, pp. 188-189. No, no, not so fast. The Nazarene's body has long ago mouldered into dust, assuming that he ever lived. His soul, therefore, on the lines of monistic positivism has been extinguished.

What is "present in humanity" is not Christ, but *ideas about* Christ, which is a very different matter. For myself, I would not give two-pence for an immortality of this kind, and I have no doubt that the average man in the street will heartily echo my sentiments. What is wanted is not a *metaphorical* existence in somebody's mind, when that somebody happens to think of you, or somebody's character has to be moulded, but a *real conscious* perpetuity in one's own right. Anything less than this is of no account to its possessor.

To turn to the subject of Idealism, I note with interest that Dr. Carus views "all objective existence" as *in itself* subjective, "that which appears to us as a motion is in itself either a feeling or something analogous to feeling." Exactly; this is the point on which I have laid such stress in working out my theory of the Meta-conscious and the new Monadism. The truth is that Subjectivity has many grades, of which what we term reflective self-consciousness and the ordinary direct consciousness are merely two—of special interest to us owing to our position in the universe. As observed by our author, "let us observe and study natural phenomena, and we shall learn something of the souls of other creatures and things" (p. 22). Yes, but it is just in observing these domains that I found my *lower monads*, the very "*souls*" of creatures and things, which Dr. Carus himself is here on the verge of admitting! Our author is, as I know, no friend to Monadology, but he has very nearly stumbled on it here.

I am quite in accord with the author in condemning the "sham" or Mâyâ theory of perception held by so many Hindu thinkers. Nature as we perceive it is a revelation, though the activities in our consciousness need not be viewed as more than symbols of the spiritual activities in that wider Nature which lies beyond our consciousness. In my *Riddle of the Universe* I have dealt with this and like points at length.

I think that Dr. Carus unduly narrows the meaning of Idealism when he regards it as the school that questions the "objectivity of our representations." Idealists are of many schools; agnostic, nihilistic, subjective, objective, absolute idealists, etc., are to be met with. The only idea common to these schools is the belief that in

consciousness or in activities akin in nature to consciousness must be sought the entire explanation of the universe. Theories of perception, termed idealistic, differ widely.

There is much in Dr. Carus's tersely written *Primer* on which I should like to dwell, but I must perforce at this point bring my already too lengthy remarks to a close.

EDWARD DOUGLAS FAWCETT.

TORQUAY, ENGLAND.

PANLOGISM.

IN REPLY TO E. DOUGLAS FAWCETT.

INTRODUCTORY.

EDWARD DOUGLAS FAWCETT has earned a well-deserved reputation in two fields—*belles lettres* and philosophy. He is a novelist of great force, and at the same time a philosopher who has become widely known through his book, *The Riddle of the Universe*. In the latter he combines the elegance of a novelist with the keenness of a thinker, and shows himself excellently well versed in the history of philosophy. His results differ greatly from mine, but that does not prevent me from recognising his unusual abilities, which manifest themselves again in his present article, "From Berkeley to Hegel" (pp. 41-81 of this number), and I am specially indebted to him for honoring me at the close of his expositions with a critical consideration of my own views. A man of his compass deserves a hearing. I have, therefore, weighed his objections, and propose to make a few comments in reply.

Mr. Fawcett has read my *Primer of Philosophy* and various *Monist* articles of mine, but, interpreting them in the terms of his monadology, which is his scheme of thinking the world, he misconstrues the import of my propositions concerning the moral aim of life and the immortality of the soul. The main point of contact, it appears, lies in the principle, which we both recognise, that (as he expresses it) "in consciousness, or in activities akin in nature to consciousness, must be sought the explanation of the universe." But our roads separate at once, for, taking this premise, Mr. Fawcett jumps at the conclusion that the nature of soul-life indicates

the existence of soul-monads, who then are made responsible for the continuity of soul-evolution and the relative stability of the spiritual phenomena of life. I may misunderstand Mr. Fawcett's theory, but when I hear the word monad, I think of a unit-centre, either of matter or of force, and there seems no doubt about it that Mr. Fawcett means to convey some such idea, for he speaks of souls as "impervious self-contained centres." Of what use the idea of a monad, of an impervious, self-contained centre, can be in the explanation of soul or consciousness is more than I can say. What has imperviousness to do with thought? Imperviousness is a quality of material objects, but not of soul, or spirituality, or mind. Monads and minds, centres and souls, have as little in common as atoms and ideas.

In order to reply to Mr. Fawcett's criticism, we must go over a good deal of ground, for he touches the most important problems of philosophy. We must ask: (1) What is soul, or spirit, or mind? (2) What is reason? (3) Does the unity of consciousness and the identity of personality prove the existence of monads? (4) What does immortality mean? and (5) What is the purpose of life?

WHAT IS SOUL?

Mind, soul, and spirit, are synonyms; they are abstractions from the same reality with slight variations of meaning. We speak of soul when we think of the sentiments of a man; we speak of mind when we refer mainly to his rational powers and the interaction that takes place among his ideas; we speak of spirit when emphasising the significance and character of thoughts without reference to bodily conditions. We speak of the spirit of a book to denote its tendency and import, but we should not say that the book is ensouled, for it has no feelings. Should the expression be used, "there is soul in the book," we could only mean that it had been written by a man of sentiment, that the soul of the book is the enthusiasm which it is liable to rouse. While a book may bear the stamp of intellectuality, we cannot speak of the mind of a book, because the book is not active. It may contain thoughts;

but it does not think; it may present arguments, but it does not argue; it may be rational, but it does not reason. It cannot reply to objections which a reader may happen to make.

Assuming that the chemical elements are various forms of the same substance (which, according to the law expressed in Mendeljeff's series, is more than simply probable), and observing that the materials of which human bodies consist are not different from materials found in the air, the water, and the earth, and also in the stars, we come to the conclusion that the conditions of sentiency from which the soul takes its origin are a feature that is an inherent quality of all existence. The sentiency of a man is not inserted into his body, but is the inner aspect of his bodily organisation. It is the subjectivity of his objective existence.

"Soul" is used in two senses. In a general and loose way it means the entire subjectivity of man, as which it is a synonym of spirit and mind. In a special sense the word is distinguished from, and sometimes even contrasted with, mind and spirit. By "soul" in a general sense we understand the system and sum-total of all the different kinds of feeling that animate a sentient organism; and every feeling is conceived as the exact analogue of some nervous activity. The peculiarity of feelings, such as we know them from our own experience, and their practical importance, consist in this, that they represent, symbolise, or denote the various things, relations, and actions with which they are severally associated. The forms of the various feelings depend upon the forms of the conditions under which they were experienced, and thus they appear as images of the surrounding world. They are subjective states of awareness and at the same time pictures of objective reality, and their memories, being aglow with life, make up the fabric of personality.

Sensations and memories remain in constant communication among themselves. By a combination of two or more images new ideas can be produced; the process of procreating new images being called imagination. The interaction that takes place among the various images or representations is called thought. When thought remains consistent with itself and in agreement with the possibilities of actual existence, it is called rational, when it begins to con-

tradict itself, irrational.¹ Thus reason is in the province of thought that same intrinsic necessity and harmony which in objective existence is the condition of the cosmic order as it appears in the regularities which can be formulated in so-called laws of nature.

When we speak of soul as contrasted with spirit or mind, we refer mainly to the sentiency of representative images; when we speak of spirit, we think mainly of their significance, and when we speak of mind we emphasise their rationality. That which pertains to sentiment is called psychical; that which has meaning is called spiritual; that which characterises the rules of the interaction that takes place among soul-forms is called mental.

WHAT IS REASON?

We do not now intend to explain the origin of soul, mind, and spirit, for we have done so over and over and again;² our purpose here must be to elucidate those points which are misrepresented by Mr. Fawcett. Suffice it, then, to repeat the definition that man's spirituality (his soul, his mind, his spirit) is a system of sentient symbols. Wherever feelings (that is to say, states of awareness) acquire meaning which is different according to the various forms of feeling corresponding to various forms of objective realities, there soul originates. Soul, or spirit, or mind, is neither an unknowable essence nor a mystical monad-entity, but a definite condition of being which depends upon definite forms of organisation, the characteristic feature of which is representativeness. A definite form of feeling is representative if it depicts, if it stands for, and denotes a certain reality to which it has become related and associated by repeated experience. The paramount importance of representativeness is obvious, for it is the representative value of feelings which renders adaptation to the surrounding world possible. In other words, while things devoid of mentality are at the mercy of circum-

¹ The problems of the *a priori* and Pure Reason are discussed in *Fundamental Problems*, pp. 26-60 (Chapter "Form and Formal Thought") and in the *Primer of Philosophy*, pp. 51-117. See also *The Monist*, Vol. II., No. 1, pp. 111-120 ("The Origin of Thought-forms").

² Especially in the first chapters of *The Soul of Man*.

stances, mind acquires the ability of directing and marshalling the forces of nature and of making them subservient to certain purposes.

There are various degrees of mentality, the highest of which is the rational comprehension of man. This leads us to the next question.

Reason is, in its last and most practical aspect, the agreement of mental actions with the universal conditions of reality.

The most important feature of reality is its form. Existence in the abstract is a mere generalisation, and as such it is that feature which all existences have in common; accordingly, it is the same throughout. But the forms of things are that feature of reality which determines the suchness of actual existence in every case. Yet, while forms vary, the laws of form are invariable and universal. The idea of a thing-in-itself is pure fiction, but the conception of form in itself (of pure form or absolute form) is not only correct, but it is also a truth of great importance.

The most abstract forms of thought are logical and arithmetical relations, which can be developed by purely mental experiment. The simplest instance is afforded in pure numbers, as follows:

We posit a unit (by taking a step or marking it as a dot, or a dash, or a stroke, or whatever you like) and call it "one"; we posit another unit (taking a second step or making a second mark) and call it "two"; another, we call it "three"; again another, we call it "four." So long as we keep the same name for exactly the same operation, referring it to the same starting point, we shall, with the same operations, always arrive at the same results. The statement " $2+2=4$ " holds good for all operations in which twice two units are added, whether it be a planet that makes twice two revolutions, or whether a boy plucks twice two apples off an apple-tree; under all circumstances the result will be the same; it will *always* be four.

Statements that hold good everywhere are called universal, and universality is the characteristic feature of reason. All the laws of reason are intrinsically necessary. If we speak of necessity in connexion with reason, we do not mean compulsion or coercion. The

immanent necessity of mathematics and logic means nothing more nor less than that its application is without exception; necessity in this sense is a synonym of universality. Universality is the most characteristic feature of reason. He who denies the universal application of logical thought-operations denies the existence of reason. A denial of Panlogism is a denial of the applicability of reason.

Reason applies not to any particular thing alone; it refers not to here or there only, nor does it describe the yesterday nor the to-morrow alone; it applies everywhere and at all times. Its nature is ubiquity and eternity. Reason consists of rules that formulate those features of the world which could under no circumstances be different—those which were the same from the beginning, those which would be the same for any imaginable world; it reflects the eternity of being; it even describes that which does not and need not evolve in the cosmic development; it reduces to exact terms what may fittingly be called the supernatural, for it mirrors that which applies not only to nature as it actually is, but to any other, to any imaginable kind of nature; it states those laws which would remain the same even though the whole world of actual existence were broken to pieces.

Kant is surprised to find reality in agreement with pure reason, and seems to take reason as the prior—that is to say, “as the prior to us,” not *πρότερον φύσει* but *πρότερον ἡμῖν*. But the truth is that reality is first; reality is represented in sensation, and when analysed by abstract thought, it is found to possess a certain inalienable feature which conditions the cosmic order of the world and renders the formulation of its regularities possible, and reason—i. e. human reason—is nothing but a reflexion of this inalienable feature of reality in consciousness, and originates with the apperception of the universality of the law of sameness.

The world-order is the most important feature of existence; it is that which constitutes the divinity of the cosmos; it is the Logos of the Neoplatonist and the fourth gospel. It is supernatural because it is the condition of all possible order. It is what Mr. Fawcett calls the *Prius*,—not a *prius* in time, but in dignity; not an antecedent, but the supreme condition of all things. It is that through

which all events can be classified in laws of nature. Being in its ultimate analysis the consistency of sameness, it is the condition of rationality in the individual reason of human beings. It is that which makes mind and purpose-regulated action possible, and is the ultimate ground on which all moral conduct rests.

Fichte's definition of God as the moral world-order is not only intelligible but also sensible, but his proposition that God is the absolute ego is neither a practical idea nor is it tenable on logical grounds; it has no sense. The man who can tell us what "absolute ego" means has not as yet been found, although it is well known how Fichte arrived at his notion of the absolute ego. He started from an exaggerated idealism according to which the sole reality was his own ego; a proposition at which his students began to make their jokes, saying that Professor Fichte and Mrs. Fichte were the only two true realities in the world. And when Fichte surrendered his idealism he did not say there was no ego-entity, but that all the various egos of human consciousness were phenomena of the absolute ego, which is God. But the individual history of Fichte's philosophical evolution does not justify us in retaining a term which testifies to the previous errors of its inventor. Mr. Fawcett would probably not regard the cosmic order as real unless it were a world-spirit, or ego-monad. But is his theory justified? As it was difficult to understand that air exists, so it is the more difficult to prove that this immaterial presence of the world-Logos is an actual reality, omnipresent and eternal. People who are accustomed to imagine that only that exists which is material are inclined to regard it as a non-entity; but it is more real than the gravity of stones and the resistance of solid bodies. It is not nowhere, but everywhere; not never, but ever. It is the most inalienable quality of being; it is the most real feature of reality, and if we do not appreciate its paramount importance it is on account of its very omnipresence and unalterable permanence. The attempt to conceive that which in its very nature is superpersonal, as an individual being, as a world-spirit or a world-monad, or as an absolute ego, is a misconception of its most important feat-

ure, of that feature which constitutes its supermateriality, supernaturality, and divinity.

UNITY AND VARIETY

The unitary principle that is involved in the universality of law does not exclude variety. On the contrary, it involves it. As there are not two points in the universe which, in their actual relations to the whole, are exactly equivalent, so space, time, and materiality are "the germs whence sprout the many," not by haphazard but according to the law that, under different conditions, the same combination will be different according to the conditions.

Sentient beings become rational by comprehending the universal features of existence such as are expressed with precision in the formal sciences, logic, arithmetic, and mathematics. While there is no unfolding of the *Prius*, the *Logos*, the prototype of reason, there is an evolution of rationality in sentient beings; and this evolution follows definite laws which, however, are not yet fully understood.

Hegel regards the theory that every thesis begets an antithesis, and that the struggle between thesis and antithesis will lead to a synthesis, as the highest law of the evolution of thought, the doctrine of which he calls dialectics. He uses the theory of his dialectics as a Procrustean bed in the history of civilisation and philosophy, leading to many artificial conceptions and vagaries. But while Hegel's dialectical method has its faults, we are not prepared to say that any and all dialectics are to be rejected.

Mr. Fawcett seems to think that all panlogism must be Hegelianism, and that with the overthrow of Hegelianism panlogism of any kind and conception is doomed.¹ Panlogism is an old theory. It has practically been the consciously or unconsciously avowed tenet of all religion and philosophy. It is the soul of Platonism; it lurks in the fantastic theosophy of Neo-Platonism; it is beauti-

¹ The same idea prevails among the Hegelians who imagine that Hegelianism alone is a consistent philosophy of rational thinking. Of this the article by E. Digby in this number is good evidence. While Hegelianism has almost entirely disappeared in Germany, it seems still on the increase in England and America.

fully expressed in the Logos theory of the Fourth Gospel; it is not absent in St. Augustine and St. Thomas; among the schoolmen it is the philosophical background of realism, and finally it is the corner-stone of the spirit of modern science; it is the underlying keynote of monism, for arguments of any kind presuppose its truth. Without panlogism the universe would be a chaos of innumerable particulars, be they monads, or atoms, or what not. But if panlogism be true, the universe is necessarily and intrinsically a unity. The unity of the universe is neither local, nor temporal, nor material; it is not comparable either to the center of a circle, or to the capital of a country. The unity of the universe is a unitariness of its constitution, and not the dominion of a central monad over other monads of less importance. It is not a definite unit, but a sameness of the laws of existence, a oneness of the cosmic order. God is not one in number, but one in kind. He is unique. To believe in one God, as opposed to several Gods, is a pagan view which is more advanced than polytheism but remains upon the same level.

THE UNITY OF CONSCIOUSNESS.

The fact upon which Mr. Fawcett builds his monadology is the unity of consciousness. The monadologists know very well that the mind consists of many images and exhibits a very complicated thought-mechanism, but they regard all thoughts as mere tools in the possession of the soul-monad. The fact that there is always one idea uppermost in a normal consciousness is explained by the assumption that the soul-monad selects one thought or another as an object of its attention. But the unity of consciousness is no more a reason for believing that man's soul consists of a monad, than the unity of a watch would be for supposing that there is in every watch an indivisible watch-monad which causes its hands to denote by their position one definite moment of time. The fact that one idea is the strongest and monopolises consciousness is no more wonderful than that a man can at a time walk in one direction only, and not in two, three, or four, or that his eyes can focus one object only and not two, or three, or more. If every unitary action de-

manded the presence of a monad, we would be in need of electricity-monads for electric currents, engine-monads for every machine, and national monads for every nation that has a distinct individuality and history of its own. The unity of consciousness does not imply that there is a definite and impervious centre in the conscious being but is conditioned by the object of attention, which may be a thing outside that is watched, or an idea, a purely mental representation that is considered.

But Mr. Fawcett will say that every man is in possession of an ego-consciousness which attests his identity throughout all the changes of his life. Yet what is that ego-consciousness but the habit of calling oneself by the same name, John Brown or Tom Smith, or whatever it be—a name which can be replaced by the pronoun "I." The word "I" denotes a man's personality, and his personality represents certain soul-forms in continuous development. A certain stock of thoughts and impulses remains permanent while others change and still others are added. Whatever view we take of a soul-monad, whether it be conceived as the ever-shifting attention that determines the unity of consciousness, or as the notion of one's own self, subsumed under the collective word-structure "I," or the continuity of our life-history, it can never be conceived as a centre. There are various ways of conceiving the unity of man's mental organisation, but this unity is not one of place or substance, and a monad-conception is perfectly redundant.

THE IDENTITY OF PERSONALITY A PRESERVATION OF FORM.

The immortality of the soul depends according to Mr. Fawcett upon the preservation of the monad of a man,—a very precarious immortality, indeed, for this monad is a very hypothetical creature. But so enthusiastic is he about the preference of his monadology that he fails to understand the monistic conception of immortality. He says, "If body and soul are inseparable, the soul must die with the body." Thus, he concludes, the monistic conception of immortality is "a mockery in all seriousness."

Now it is true that monism insists in a certain sense upon the inseparableness of body and soul; we cannot cut the soul out of

the body and say, here is my soul and there is my body. There are not souls in themselves. Wherever a soul exists, it is incarnated in a body. Mr. Fawcett might, in his imagination, pride himself on being able to remove the monad from the bodily system. It would be interesting to witness the experiment and to see what a monad looks like, how it is benefited by the mental acquisitions registered in the brain, and whither it migrates after its separation from the body; but other mortals like myself, who are less imaginative, will, so long as nothing is known about monads, find no comfort in his hypothesis.

But if there is no soul-monad, must we not accept the dreary theory that the soul dies with the body?

Mr. Fawcett forgets that while the soul is always inseparably connected with materiality, it is not identical with the body. We repeat: soul is the form of feelings, and the form of feelings depends upon the form of the nerve-activity of an organised system; and every organised system consists of definitely arranged groups of material combinations. The soul is preserved wherever the form is preserved; but the preservation of soul-forms does not depend upon the retention of those material particles which at a given moment constitute the body. The fact is familiar that the material particles of living beings are constantly changing. Life, physiologically considered, is *Stoffwechsel*, a constant flux of materials. There is no sameness of substance whatever. The identity of a living being involving the sentiments of consciousness is not maintained through the presence of a monad, but through the preservation of its form. All the many subconscious and conscious memories which form the elements of our mentality are definite traces of former sense-impressions, reacting upon sense-impressions, and embodying sentiments, and thoughts, the forms of which are preserved in the cerebral system, the substance of which is constantly changing. Am I for that reason another person because I cannot think the same thought twice with the same molecules? Does the thought change because the oxygen engaged in the first act of thinking has now entered new combinations and is soon to be discarded from the system as waste material? We might as well de-

clare that the significance of a word changes when it is written once in pencil and once in ink. Man's personal identity consists not in any way in an identity of material particles, but in the sameness of form which is preserved by the continuity of his existence.

IMMORTALITY.

The continuity of life appears to be broken in death; but we must emphasise that it is not broken, it only appears to be broken. Every action in which a man manifests himself is a preservation of his peculiar personality, it preserves his individual life-forms and immortalises him. The spheres of influence vary greatly, but no man can fail within the range of his circle to impress his soul upon the future evolution of the race. The evolution of life on earth is as continuous as the life of every individual being; and every individual being is such as he is only because the soul-treasures of former life are hoarded up in him; he is not a beginning from nothing but represents the continuation of the soul-forms of which he consists at the start of his life. He is the product of evolution. He adds something of his own, be it little or much as the case may be, and impresses his soul into the new life that grows up around him.

These considerations are not fancies, but descriptions of the facts of life. This immortality is a truth and, indeed, an indubitable truth, which no one can deny. The same continuity of soul that takes place in every individual life, can be traced in the development of the whole of mankind. Mr. Fawcett has not offered a refutation. All he can say against it is that he is not pleased with it. He says:

"For myself I would not give two pence for an immortality of this kind, and I have no doubt that the average man in the street will heartily echo my sentiments."

We may fairly grant that the average man in the street does not care for preserving his soul in the further evolution of mankind, but Mr. Fawcett will scarcely pride himself on the applause of the vulgar, should his monadology be unfortunate enough to receive it. We might as well revive the Inquisition as an ultimate authority of orthodoxy as enthrone the man of the street upon the tribunal of

truth for deciding what shall be or shall not be acceptable. Whatever the man of the street may think, the fact remains that there is a preservation of soul-forms, and evolution would be a very mysterious process if this kind of soul-immortality through the continuous preservation of soul-forms were not true.

Quoting from me the sentence that "Christ is actually a living presence in humanity," Mr. Fawcett says:

"No, no, not so fast. The Nazarene's body has long ago mouldered into dust, assuming that he ever lived. His soul therefore, on the lines of monistic positivism has been extinguished. What is 'present in humanity' is not Christ, but ideas about Christ, which is a very different matter."

Now we concede that ideas about Christ are not Christ himself; but the ideas of Christ are Christ. The soul of Jesus did not depend upon that heap of atoms which constituted his body; the soul of a man consists in the thought-forms and word-forms which dominate his entire being and determine his conduct. The soul of Jesus consists in his teachings, and his teachings are preserved in words which have now been translated into all languages of the world. The words of Jesus are his soul, and his soul is immortal, and this is good Christian teaching too; it is not a church-dogma but it is the doctrine of the Christ of the Fourth Gospel.

We read in John vi., 63, and to indicate the importance of the quotation I quote it in pica:

"It is the spirit that quickeneth; the flesh profiteth nothing. The words that I speak unto you, they are spirit and they are life."

This is no figure of speech, but literal truth. Spirit is not a substance; spirit is the significance of words; and what is more significant than words that are true. Words are spirit, and it is the spirit that quickeneth. Christ lives where the word of Christ is received and where it becomes the motive of conduct. The materiality of man's life, the human body, is in its way important enough, but it is important only as the vessel of spirit. The body is not the man; the atoms are not his soul; the corporeal is not the highest and the immortal part of our being; and, in spite of the temporary in-

separableness of soul and body, there is no truth in the identification of soul and body.

The soul of a man is inseparable from his body; and yet the soul is a distinct and disparate reality which can be preserved while the body is dissolved. In the same way matter and energy are inseparable. There can be no energy without matter and no matter without energy. Yet energy is a distinct and disparate reality. It can be transferred from the burning coal to the water in the boiler, and from the water in the boiler through the steam to the wheels of the engine.¹

THE IMMORTALITY OF BOOKS.

Take an illustration. Here is the Bible. It consists, as all books, of many sheets of paper covered with little characters in black. Is the Bible destroyed if this copy of the Bible be burned? No, not at all. That which constitutes the Bible is not the material; it consists of those subtle forms which convey the spirit of the Bible. The spirit of the Bible, as it is embodied in the forms of printed words, is impressed upon the paper in printer's ink, but this spirit of the Bible does not consist of paper and printer's ink. Thoughts cannot be burned, and soul cannot be crushed by destroying the forms in which it resides. The inquisitors proposed to extirpate heresy and burned many thousands of heretics, yet they could not quench the spirit, and the heretics have now become the leading nations of the earth.

¹I limit myself in my reply to Mr. Fawcett to refuting those points regarding which a difference of opinion obtains. It would lead me too far to explain the various misconceptions of which I find him sometimes guilty. Suffice it to mention that by monism I understand a unitary world-conception, but not a system of thought which explains all facts as phases of *one principle*. (See Mr. Fawcett's article, p. 77, lines 12 and 13.) Matter and mind, body and soul, that which is perceptible by the senses, and spirit, are quite disparate realities. They cannot be conceived as mere phases of one and the same underlying principle. They are radically different abstracts, but they are abstracts made from one and the same reality. The view which subsumes the various qualities of existence under one head, regarding material phenomena as phases of mind, or mental phenomena as phases of matter, is a pseudo-monism which I propose to call henism. I insist that the unity of the whole of existence and the consistency of all truth do not involve the ultimate identity of the various qualities of existence.

THE SIMILE OF THE SEAL.

Another instance of the preservation of form is the imprint of a seal. And indeed the simile is good because it shows, in a better way than the printing of a book, the immateriality of form. The paper receives the form of the letters which constitute the book in printer's ink. There is a transfer of matter and thus the allegory is apt to be misunderstood; but the imprint of a seal is no material transfer whatever. In making a seal-imprint we distribute a certain amount of sealing-wax on paper and stamp the seal on it. The amount of sealing-wax is the same before and after; but before the stamping there is no seal; the seal originates through the impression.

The seal may break or be destroyed, but it can be reproduced, and, whenever the selfsame form is again imprinted into wax, there the seal will reappear. True, there is no seal without sealing-wax or whatever other material be used, but the seal is not the material; the seal is the form which is impressed upon the material.

MIND AND MORALITY.

Taking the facts of experience as the ultimate test of truth, and accepting scientifically elucidated statements of fact as the guide of conduct, we arrive at the conclusion that spirit is paramount in importance, and body is of no account whatever save in the service of the spirit. The value of anything material and also the value of our bodily make-up must be measured by its usefulness in the support and growth of the soul. In itself the flesh profiteth nothing. Inorganic nature is indifferent; the storm, the sunlight, the ocean, are neither moral nor immoral; they are neither good nor bad; they become good or bad simply through mind. If in the starry heavens two celestial bodies should meet in collision, their conflagration would be of significance only if somewhere living souls were affected; otherwise it is more indifferent than a child's sneeze.

I do not say that good and evil are mere illusions. Good and evil are actual facts; but in saying that good and bad, right and

wrong, moral and immoral, virtue and vice, are features of the mind, it is the use of mind that produces these contrasts by its attitude when confronted with the duties that life imposes.

Mr. Fawcett has a very low opinion of mind. He says: "If right and wrong, good and bad, only exist in our mentality, it appears that the meliorist is sacrificing himself merely for a figment of his own imagination, a barren, thankless ideal of his own making."

This is both a misconception of what I said and an undervaluation of man's mental activity. I say Facts in the objective word are neither right nor wrong; facts are real; they are neither true nor false. If a geometer measures the height of a mountain, his calculation may be right or wrong; but the height of the mountain is not wrong when it turns out to be different from what we expected. In a word: Facts are real, but ideas representing facts are either right or wrong. Error and truth belong to the realm of mentality. Unmental things are neither vicious nor virtuous; virtue and vice rise into being together with mind, for they are attitudes of mental aspiration.

THE PURPOSE OF LIFE.

He who cannot comprehend the essentiality of form will never free himself from materialism in philosophy, psychology, and ethics. He will not appreciate that the most important realities are immaterial. He will try to think God and soul as substances or entities and seek the purpose of life in pleasure.

Mr. Fawcett's monads are entities. They are, closely considered, substances which, for the sake of ridding them of gross materiality, have been reduced to atomic size; and, as to the ethical aspect of life, Mr. Fawcett finds no value in soul-growth, in the acquisition of truth; in the comprehension of life and of its meaning, in the self-realisation of the soul apart from pleasures that may or may not accompany our mental evolution. There is no value in these or other accomplishments except they produce happiness. I said somewhere that evolution consists in the expanse of the soul and in a growth of mind, but that there is no perceptible increase of happiness. The ratio between our wants and their satisfaction re-

mains about the same, and, while it is true that many pains are alleviated, there is at the same time an increase of sensibility to pain. Thus there is rather a decrease of happiness in evolution, for children enjoy life better than adult people, and, in comparison with the lower races, who in their ignorance and simplicity are as happy as children, the most civilised people appear morose and gloomy. A wise man is not happier than a fool; on the contrary, the fool is mostly merrier than a wise man, who foregoes many joys because of his deeper wisdom. Of course there are intellectual and moral pleasures, which, if not greater, are nobler, than the greatest merriment of fools. But it is not (as Mr. Fawcett thinks) the pleasure which gives value to moral aspirations. He says:

"Meliorism does not find the value of life in reaping pleasures. Nevertheless, a value that does not relieve pain or produce, or tend to produce, pleasure, is a thing which I, for one, confess myself at a loss to understand. The term, in fact, seems meaningless. I fail entirely to see why we should vex ourselves here with ceaseless strivings and strugglings, when the cosy nooks of degeneration lie open to us."

Certainly we need not strive and struggle. We have our choice. We can prefer the cosy nooks of degeneration, and if we prefer them we shall have them. There are countries which are governed upon the principle that progress is an evil, and there life is, in many respects, much pleasanter and quieter. Life in England, and especially in North America, makes great demands upon the people, and urges them to exert themselves to the utmost of their abilities. He who measures the values of life by the amount of pain relieved and the greatness of pleasures realised will pity them and regard their lives as failures. How different (and I, for one, say how much truer) is the standard of value given by the psalmist when he says:

"The days of our years are threescore years and ten;
"and if, by reason of strength, they be fourscore years,
"*yet is their strength labor and sorrow.*" (xc., 10.)

I have surrendered the Apostolic creed in its literal acceptance, but I have never ceased to appreciate this sentence of the psalmist on account of its deep truth. In my mental evolution I have been alienated from the Christianity of my childhood; I have abandoned

the dogmatism of church-doctrines; and I have surrendered the paganism of believing in the letter that killeth. I have dared to seek the direct revelation of God in the facts of life and, in taking the consequences of my radicalism, I became more and more convinced that God spoke to the prophets and to Christ in no different language from what he speaks to us; to you, to me, or to any one who is willing to listen. However much the spirit of Bible teachings is misunderstood; nay, whatever errors the authors of the Bible may have been subject to, this much seems sure that they hit upon several very important moral truths which are by no means antiquated. From the standpoint of positive monism, I find them verified, and considering the errors of hedonistic ethics which cannot but lead people astray on the most important questions of life, I find that there is more truth in the two Bible passages quoted in this article than can be found in all the average irreligious literature of to-day. The doctrines of the old religions are in many respects misleading, but in so far as they teach right ethics, I do not hesitate to say that they reveal the truth. He who imagines that the purpose of life is enjoyment will, when he tries to realise the hedonistic principle, be unfailingly and sorely disappointed.

The evolution of mind is not important for itself alone; it is important also and mainly as a revelation of the eternal in existence. Mind is an appearance of truth; it is an incarnation of God. The purpose of mind, accordingly, is its own self-realisation, it is a higher and higher development of truth. The purpose of life is mental growth and mental evolution. Mind hungers for truth; and truth is not only intellectual comprehension but also religious devotion; it is not mere theory but a motive for action. Thoughts are not pure conceits, but motor impulses of a definite character, and, therefore, it is not simply a notion but a power. The more man acquires of truth, the more is he ensouled by God.

Priests have built temples and cathedrals, they have carved idols and images of God, they have worshipped all kinds of symbols and regarded them as holy—but there is nothing holy except truth, and the highest aim a man can have is leading a life of truth.

EDITOR.

U. P. M.

SUBCONSCIOUS PANGEOMETRY.

FROM the press of Teubner in Leipzig has just appeared a work which perhaps can best be described as a book on "The Non-Euclidean Geometry Inevitable." This book, *The Theory of Parallels*,¹ by Paul Staeckel, in conjunction with Friedrich Engel, is a marvel of German accuracy, depth, and withal enterprise.²

It confers an inestimable boon on thinkers by giving them the actual documents which are the slow, groping awakening of the world-mind at the gradual dawning of what has now become the full day of self-conscious non-Euclidean geometry.

To one who appreciates the judicial weight of German scholarship, it must be highly gratifying to recognise its sanction of the position first put forth in *The Monist*, beginning, *loc. cit.* p. 486: "Euclid did not try to hide the non-Euclidean geometry. That was done by the superstitious night of the fanatic dark ages, from which night we have finally emerged, to find again what Euclid knew," etc.

Says Staeckel, p. 3: "Es ist kein Zufall, dass die ersten achtundzwanzig Sätze von der fünften Forderung, dem sogenannten Parallelenaxiom, durchaus unabhängig sind, und dass dieses erst beim Beweise des neunundzwanzigsten Satzes eintritt; es ist kein Zufall, dass der Aussenwinkel des Dreiecks an zwei Stellen behandelt wird: zuerst, in Satz 16, wird nur gezeigt, dass er grösser

¹ See *The Monist*, July, 1894, pp. 483-493.

² The full title of the book runs: *Die Theorie der Parallelenlinien von Euklid bis auf Gauss, Eine Urkundensammlung zur Vorgeschichte der nichteuklidischen Geometrie*. In Gemeinschaft mit Friedrich Engel herausgegeben von Paul Stäckel. Mit 145 Figuren im Text und der Nachbildung eines Briefes von Gauss. Leipzig: B. G. Teubner. 1895. Pages, 325. Price, 9 Mks.

ist als jeder der beiden ihm gegenüberliegenden inneren Winkel, und erst später, in Satz 32, stellt sich heraus, dass der Aussenwinkel der Summe jener beiden inneren Winkel genau gleich ist.

"Diese Anordnung berechtigt zu dem Schlusse, dass Euklid die in der Parallelen-theorie verborgene Schwierigkeit sehr wohl durchschaut hat."

The very pretty point made¹ against all the modern English translations and editions in reference to the different and more elegant form given by Euclid in Proposition 29 to his celebrated Parallel-postulate is confirmed by Staeckel's re-translation of the original Greek, "wie er in Heiberg's neuer ausgezeichneten Ausgabe vorliegt."

Saccheri discussed the contribution made by Wallis to the theory of parallels, and Staeckel, after his re-translation of Euclid's Book I., through Prop. 32, gives this passage from Wallis, and then proceeds to Saccheri himself.

In *The Monist*, p. 489, a sentence was quoted from Dr. Emory McClintock² in regard to Saccheri, with grave doubts. It reads: "He confessed to a distracting heretical tendency on his part in favor of the *hypothesis anguli acuti*, a tendency against which, however, he kept up a perpetual struggle (*diuturnum proelium*)."

Translating Saccheri's book into English strengthened these doubts into the conviction that the whole was an error based on a mistranslation of the passage pointed out by the two Latin words retained in parenthesis. A letter embodying this conviction was written to Dr. McClintock, who thereupon made a special trip to the Astor Library to read again Beltrami's article on Saccheri, entitled: *Un precursore italiano di Legendre et di Lobatschewsky*. He thereupon answered:

"I have just read Beltrami in the Astor Library, also my own paper. Saccheri was always fighting against the heretical results of his own logic on behalf of what he obviously considered God's truth."

¹*The Monist*, p. 488.

²*Bulletin of the New York Mathematical Society*, Vol. II., p. 145.

"I did not speak of him as yielding; but one who is battling manfully against the productions of his mind may fairly be described, I think, in the words you dispute, though Saccheri's 'confession' is implicit and not explicit.

"I should have done better to use the words 'suffered from' for 'confessed to,' though there is sufficient confession in the 'proelium.'

"Beltrami is disgusted by the unexpected triumph of faith over logic.

"Or qui crederebbe che subito dopo la proposizione testé citata il lettore dovesse vedersi comparire innanzi quest' altra. [Prop. 33.] Eppure è proprio così. L'Autore fa un lunghissimo discorso per conestare piuttosto che dimostrare cotesto suo asserto. . . . Si direbbe quasi che l'Autore, più che a convincere altrui, si adoperi a persuadere sè stesso. . . ."

But still the conviction remained that there was no adequate ground in Saccheri for this interpretation of the "diuturnum proelium" passage.

A transcript of a considerable portion of the only copy of Saccheri's book then on this continent was made and sent to Dr. McClintock. He at once replied:

"I thank you for the manuscript, which I shall take care of and return. Now I need to consult Beltrami's article again.

"The original context of the 'diuturnum proelium' gives me a wholly novel view of it, instantly. It was a reference to a 'running fight' on paper, part of a mere summary of the book.

"I had supposed it to be a bit of mental autobiography.

"I do not doubt that Beltrami's mention of it is not inconsistent with the meaning Saccheri intended,—yet it failed, even the other day after your question, to suggest to me the true meaning. I will write again after I can get to the Library.

"You can blame me and the lack of context, not Beltrami, unless his suggestion that *Saccheri was trying to persuade himself*, may have helped."

The article in *The Monist* continues as follows: "The Inquisitor-general and the Archbishop of Milan saw Saccheri's book on

July 13, 1733; the Provincial of the Company of Jesus on August 16, 1733. Within less than two months Saccheri was dead and buried. Not so his book. It was reviewed in the *Acta Eruditorum* in 1736. It was probably in the library at Göttingen about 1790–1800, for it is marked with an asterisk in the *Bibliotheca Mathematica* of Murhard. In this work it is signalised (I. II., p. 43) among the writings consecrated to the explication, to the criticism, or to the defence of Euclid (*Einleitungs- und Erläuterungsschriften, auch Angriffe und Vertheidigungen des Euklides*). It therefore attained a certain notoriety. Did it escape the notice of Gauss?"

This suggestion has now been verified by Engel and Staeckel (p. 38) with truly German minuteness. "*Der Euclides ab omni naevo vindicatus* scheint ein ziemlich verbreitetes Buch gewesen zu sein. In Deutschland haben wir sein Vorhandensein auf den Königlichen Bibliotheken zu Berlin und Dresden und auf den Universitätsbibliotheken in Göttingen (seit 1770), Halle, Rostock und Tübingen festgestellt."

In the very brief sketch of Lambert by F. W. Cornish of Eton College, inserted in the *Encyclopædia Britannica* in 1882, how did it happen that from the mass of Lambert's papers one of the few mentioned should be that on *parallel lines*? If any hint of its known or possible interest was meant, it bore fruit; for only in 1893 and by accident did Staeckel discover in Lambert a precursor of Bolyai and Lobachewski. In the present book seventy-two pages are devoted to this treatise of Lambert. It is a developed consistent non-Euclidean geometry.

In some points it falls short of Saccheri; for instance, in not reaching Lobachewski's highly interesting "boundary-lines."

But in other respects it goes beyond Saccheri. Its examination, as compared to the writings on which the claims for Gauss are made, shows some startling coincidences.

That it was familiar to Gauss is clear from the letter of Bessel to Gauss, Feb. 10, 1829, where it is referred to as something well-known in the following paragraph: "Durch das, was Lambert gesagt hat und was Schweikardt mündlich äusserte, ist mir klar geworden, dass unsere Geometrie

unvollständig ist und eine Korrektur erhalten sollte, welche hypothetisch ist, und wenn die Summe der Winkel des ebenen Dreiecks $= 180^\circ$ ist, verschwindet.

"Das wäre die wahre Geometrie, die Euklidische aber die praktische, wenigstens für die Figuren auf der Erde."

Says Lambert, § 79: "Ich habe aber vornehmlich bey der dritten Hypothese [angle-sum $< 180^\circ$] solche Folgsätze aufgesucht, um zu sehen, ob sich nicht Widersprüche äussern würden. Aus Allem sah ich, dass sich diese Hypothese gar nicht leicht umstossen lässt.

"Die erheblichste von solchen Folgen ist, dass, wenn die dritte Hypothese statt hätte, wir absolutes Maass der Länge haben würden."

Says Gauss in his letter to Taurinus, 1824: "Die Annahme, dass die Summe der 3 Winkel kleiner sei als 180° , führt auf eine eigne von der unsrigen (Euklidischen) ganz verschiedene Geometrie. . . . Alle meine Bemühungen, einen Widerspruch, eine Inconsequenz in dieser Nicht-Euklidischen Geometrie zu finden, sind fruchtlos gewesen, und das Einzige was unserm Verstande darin widersteht, ist, dass es, wäre sie wahr, im Raum eine an sich bestimmte (obwohl uns unbekannte) Lineargrösse geben müsste."

Says Lambert, p. 200: "Diese Folge hat etwas Reizendes, welches leicht den Wunsch abdringt, die dritte Hypothese möchte doch wahr seyn!"

Says Gauss, p. 250: "Ich habe daher wohl zuweilen im Scherz den Wunsch geäussert, dass die Euklidische Geometrie nicht die Wahre wäre, weil wir dann ein absolutes Maass *a priori* haben würden."

Again Lambert shows that the formulas of this non-Euclidean geometry are simply those of spherics on an imaginary sphere. Now what Dr. McClintock (*Bulletin*, Vol. II., p. 146), calls "the important formula for the circumference of a circle published later by the younger Bolyai," given in 1831 by Gauss in a letter to Schumacher, is nothing but the elementary expression for the circumference of a circle on a sphere where the radius r has been replaced by $r\sqrt{-1}$. Moreover it is now known that Bolyai János discovered his system of Pangeometry in 1823.

In a letter of May 17, 1831, Gauss says: "Von meinen eignen Meditationen, wovon ich aber nie etwas aufgeschrieben habe, habe ich vor einigen Wochen doch einiges aufzuschreiben angefangen. Ich wünschte doch, dass es nicht mit mir unterginge."

It is mentioned in *The Monist* that in a letter to Schumacher, Gauss tells him that "a certain Schweikardt has given to this geometry the name of *Astralgeometrie*," and Gauss added in regard to him the brief note: "Früher in Marburg, jetzt Professor der Jurisprudenz in Königsberg." On p. 9, of the English translation of Vasiliev's Address on Lobachewski is the sentence: Taurinus in his *Theorie der Parallellinien* (1825) says: "The idea of a geometry in which the sum of the angles of a triangle is less than two right angles was already communicated to me four years ago (by my uncle, Prof. S., in K., then still in M.)."

Ferdinand Karl Schweikart (1780-1857) studied from 1796 to 1798 in Marburg, attending there the mathematical lectures of J. K. F. Hauff, who since 1793 had published different writings on the question of parallels. From 1812 he was professor in Charkov; from 1816 in Marburg; from 1820 in Königsberg. Entirely by himself, without the slightest suggestion from any man, he developed and taught a non-Euclidean geometry.

Engel and Staeckel seem to delight in the perfect proof of his independence from even the remotest connexion with Gauss.

Gerling (1788-1864) from 1817 professor of astronomy at Marburg, wrote to Bolyai Farkas: "We had here about this time [1819] a law professor, Schweikart, who had previously been in Charkov, and had attained similar ideas, since, without aid of the Euclidean axiom he developed in its elements a geometry, which he called *astralgeometry*. What he communicated to me in regard to it, I sent Gauss, who then communicated how much farther had already been advanced on this way [wie viel weiter man schon auf diesem Wege gekommen]." Can this refer to Saccheri or Lambert? Our authors say, p. 252: "Schweikart's achievement consists in this, that independently he clearly recognised and declared the possibility and the justification of a non-Euclidean geometry."

It is satisfactory to give every one the place justly due in what

will perhaps be eventually looked upon as the profoundest achievement of modern thought, but it is really comforting to have reaffirmed as the mature outcome of this splendid work what has already long been the world's judgment, that Bolyai and Lobachewski must be looked upon as the real founders of the non-Euclidean geometry.

GEORGE BRUCE HALSTED.

AUSTIN, TEXAS.

LITERARY CORRESPONDENCE.

FRANCE.

The new book of M. FR. PAULHAN, *Les types intellectuels, Esprits logiques et esprits faux*, is a continuation and amplification of its predecessor, *Les caractères*. M. Paulhan attempts a searching examination of the human mind, with a view to indicating such of its qualities as can be arranged in a definitely graduated scale, the model of which is a perfected psychological scheme defined *a priori*. The author discovers the required psychological model in systematic association or in "finality," and I shall not attack his doctrine upon this point, but shall restrict my remarks to his mode of arranging intellectual types.

The author is guided by a distinction, antecedently made, between the *form* of mind, or its modes of operation, and its *matter*, or the thoughts and images characteristic of men as members of classes. Is this distinction a legitimate one? It doubtless is so, for the rational or irrational character of the mind (I should have preferred the antithesis *Esprits justes et esprits faux*) may manifest itself alike in two totally different persons, say a musician and a jurist, who do not work upon the same materials, and who make use of different thoughts and images. There are reasoning and unreasoning types of poetical imagination, as I myself pointed out not long ago. Nevertheless, I believe there are difficulties in the path on which M. Paulhan has ventured.

No one will think of disputing his right to establish, first, a primary series of intellectual characteristics, resting, as he would formulate it, (1) upon the degree of independence asserted by the

intellect over the emotions and (2) upon the form of the mind's associations, and then subsequently to set up a secondary series founded upon the thoughts and images with which the mind operates. But have we not here two principles of classification absolutely independent rather than a set of characters naturally subordinated to one another? Do not categories of *form* and categories of *matter* apply to two facts alike general and alike important according to the view which we take of them? The method pursued by M. Paulhan consists, therefore, in discovering in single individuals, viewed apart, such and such marks, all of which have been previously defined by abstract analysis. It offers thus a means of giving excellent descriptions and highly finished portraits. But if we attempt to assort individuals by the rigid categories here marked out we shall run the risk of dissipating the total personality of the individual, and of losing it altogether. The method culminates rather in a reasoned set of interrogatories than in a real classification.

"Between abstract laws and individuals," writes M. Paulhan, "there are no mental groups—no intellectual species—*having interest for general psychology*." By this declaration he seems to have definitely circumscribed his plan and to deny all psychological value to the natural history of societies founded upon such spontaneously engendered groups as race, classes, and professions. Yet is it not undeniable that the choice of a profession presupposes *some* profound resemblances between individuals who may in other respects be unlike? This is an open question. But the creation of professional types encounters difficulties and is susceptible of criticism, the justness of which I can all the more appreciate from having once personally attempted the task. I am by no means pleading *pro domo meo*, but am concerned only with discovering the truth. In fine, then, I understand perfectly well how M. Paulhan can produce good portraits by his method, but am at a loss to perceive how his individuals are to be classified in relation to one another; and I particularly doubt if the groups obtained by his methods will ever exhibit anything approaching to lifelike objectivity or reality.

In the meantime it will be well to await the appearance of the second volume, which M. Paulhan has announced, when we can judge of the entire work with perfect knowledge. A high value it will always possess, both by its wealth of details and by the place which it occupies in the philosophical thought of the master. I should offer some apology for having devoted so few lines to the commendation of the book if that were not superfluous in the case of a writer of the author's standing.

M. L. MARILLIER offers us a French translation of the learned work of ANDREW LANG, *Mythes, cultes et religions*. As there is no necessity of speaking of the work itself here, I shall apply myself to the remarkable introduction which the translator has prefixed to it. M. Marillier first refers to the new direction which the study of religion has taken, in consequence of which the anthropological and psychological school has dethroned the philological school followed by Max Müller. The comparative study of religions will enable us, he says, to disclose this truth that there exists a religion common to all humanity, or at least a mythology based upon ideas and modes of knowing and feeling, which are the same for all human beings, no matter what their race or nationality may be. In the presence of the phenomena of nature men have everywhere put the same questions and given approximately the same answers. The myths are innumerable, but may be reduced to a small number of types. Mythologies, in fine, lie at the foundations of all religious edifices; they represent a common aggregate of ideas and of sentiments, and at the beginning took the place of theology, science, and ethics.

Are myths things of the past? Must we accept with Comte that the different forms of thought in succeeding each other replace each other? M. Marillier is not of this opinion. He does not believe that science will eliminate metaphysics. All depends upon the significance in which the word is used, for the answer will be different according as we consider the lower or the higher forms of speculation. Sound knowledge will never exclude broad and comprehensive inductions; but it is incompatible, in one and the same

mind, with arbitrary and infantile fancies which have not the character of positive hypotheses. Comte made an unfortunate application of the vague word metaphysics, and one which has considerably injured his doctrine. It is advisable to extend his conception instead of narrowing it, and then the incontestable truth which it expresses will appear in its full light.

M. Marillier also apparently reproaches Comte with having failed to recognise the existence of a *special* religious emotion. But what can such a religious emotion mean, separated from all "dogmatic affirmation" and from all "moral precepts"? Is it sufficient to assure the existence of religion,—that "assemblage of emotional states, of sentiments and desires," to which M. Marillier attributes distinct originality, although comparing it to æsthetical emotions? The religious emotion, in my eyes, is intimately connected with the mental state of the individual and the race, and it is dependent at all times upon the beliefs actually living in the minds of men. It is the echo, in the emotional life, of our conception of the world, whether the same be derived from tradition or from science, whether it be formed of faith or of scientific hypothesis. And this religious emotion actually offers widely diverging characteristics, even in men like Francis de Assisi and a Vincent de Paul, in Herbert Spencer and Guyau, not to speak of the savage who has his head full of superstitions and terrors. It does not wear with all of us the same dress; it is continually modifying, according to the state of our general beliefs; it is a reflected product of the psychological state, or if you wish, a particular aspect of our fundamental emotions, but not a spontaneous and primordial fact. Every attempt at constructing a religion ought therefore to aim at producing a new knowledge, a new view of the world, which would thereupon engender a corresponding emotion. Thus it is I conceive the continuity and evolution of religious life, upon a basis common to the whole human species. Otherwise, if religion were not the work of man himself and a product of his culture, we should be forced to revert to supernatural revelations and to the mysteries of an inexplicable psychology.

M. SULLY PRUDHOMME, in his *Que sais-je ? Examen de conscience*,¹ has taken up the fundamental problems of philosophy. He "re-thinks" them after his own fashion, but does not succeed in elucidating them. Neither the notions of existence and of substance, nor the doctrines of free will and determinism receive new light from his complicated analyses. The fact is that, worn out at last by the effort he has put forth, the poet takes refuge in "sentiment"; and by sentiment he understands a genuine inward revelation, the connecting bond of which with any sort of metaphysical existence escapes us. He has borrowed from his excursion into the domain of modern science a prudence that discomposes him and runs counter to his true philosophical nature, which tends to ancient idealism. He is precise neither as to the meaning of soul nor as to that of ideals. His vision is stationary and without support, and his criticisms are nowhere striking. But it is surprising that he has retained the phantom of the *unknowable* after having properly enough declared that he regards it merely as a synonym of what will always remain unknown to man in the phenomena of the universe, Dialectic subtlety, inability to throw a vivid light on the great problems, recourse to sentiment and to the mysterious endowment of the poet and the artist,—such are the characteristics of the work of M. Sully Prudhomme. But his effort is of altogether too noble a character and of too great rareness among the poets of our day not to command our appreciation and sympathy. The faults of his work have not prevented its having many lofty and eloquent pages. M. Sully Prudhomme has a soul of delicate fibre and a mind of frankness, and these are qualities which render him in our eyes a man of superior worth.

M. JULES PAYOT has taken up similar problems in his book *De la croyance*. I shall not discuss the psychological theory upon which he has based his work, and which regards belief as a genus of which certitude is merely a species, belief itself being declared identical

¹P. Lemerre, publisher. The other works mentioned are published by F. Alcan.

with will. The state of relativism and subjectivism to which we are subject leads M. Payot to declare that reality is without our reach, and conducts him to an "irremediable intellectual scepticism." He opines, however, that it will not do to allow scepticism to enter the domain of ethics, and that it is imperative to create in the consciousness of nations a system of moral beliefs of absolute universality. We can become, he says, masters of our own beliefs and almost entirely so of the beliefs of others, particularly those of children, which he seeks to show in the part of his work devoted to the "mechanism" of belief, after having studied its object and nature.

The project is an excellent one, although its realisation may be effected by different methods. Nevertheless, M. Payot appears to me to be laboring under an illusion when he speaks of "educating universal suffrage." This last institution possibly has not the solidity which he attributes to it, and many reasons make for the presumption that the progress of social organisation will modify it profoundly. Another point also affords me difficulty. M. Payot demands a faith "living and always ready for action and self-sacrifice," which he opposes to the "theoretical and abstract" faith. But is this opposition really so radical? And how are we to interpret it when he adds himself with eloquence and aptness that the triumphant idealism of to-day teaches us to comprehend "that what constitutes our worth is the fact of our being the transitory expression of the essence of things, and that our whole destiny and more so our duty is to labor to become the most perfect expression possible of the laws of this essence?"

* * *

I regret not being able to discuss the solid thesis of M. E. THOUVEREZ, *Le réalisme métaphysique*, from which I shall merely cite the author's belief "in the unity of all the principles, in the harmony of the world and of the mind, in the regular constancy of all rational laws, and in their existence in God who guarantees and directs them," and also his affirmation that the "reality of this God is the great miracle in the world which the world cannot comprehend."

I also regret being only able to mention the following works:

Histoire de la philosophie atomistique, by L. MABILLEAU, which is quite important; *La Théorie platonicienne des sciences*, by ELIE HALÉVY; *L'Ecole Saint-Simonienne*, by GEORGES WEILL, a very instructive book; and among the less voluminous productions a thesis of M. J. LACHELIER, which was widely noticed on its original appearance, entitled *Du fondement de l'induction*, and which is supplemented in its present new edition by the article *Psychologie et métaphysique*, to which perhaps we may refer later; an *Exposé critique des principes du positivisme contemporain*, by M. JEAN HALLEUX, in which the author seems to be bent especially on demonstrating that human knowledge, while having its root in sensuous experience, yet ultimately goes far beyond the data of experience; a French translation of the *Paradoxes* of Nordau; the new study of applied psychology to which M. F. QUEYRAT gives the title *Les caractères de l'éducation nouvelle*; and finally, the extracts from the ethics of the Chinese philosophers, which M. J. DE LANESSAN has conveyed to us from India and China.

I had almost forgotten, in a different order of studies, the learned and interesting work of M. C. BOUGLÉ, *Les sciences sociales en Allemagne*, arranged with a view of exhibiting to us, after the manner of Lazarus, the plan of a psychology of nations; after Simmel that of a science of morals; after Wagner that of a political economy; and after Ihering that of a philosophy of law.

LUCIEN ARRÉAT.

PARIS.

DIVERSE TOPICS.

HEGEL'S MONISM AND CHRISTIANITY.

Looking back upon the history of ideas in the past and noting the ever-changing waves of opinion, the different systems of philosophy, the rise and fall of religions, we are moved by a strong desire to find out if there is not a single principle the truth of which has been demonstrated by its capacity of endurance and by the endurance of all that has been its logical outcome. There has been a universal belief that such a principle exists holding good in philosophy, religion, and ethics which would form the foundation for an enduring and world-wide system. Amongst the Greeks this belief first found expression in the teaching of the Ionic philosophers, for them this mysterious fundamental principle was a material one—Water, Air, Fire. The Pythagoreans had Form for this principle; following upon the Pythagoreans came the Eleatics, their principle was Pure Being; the system of the Eleatics was the first attempt at Monism, but an unsuccessful one withal, because it ignored the world of sense instead of absorbing it. From the very earliest time every system of philosophy has been vitiated by a persistently recurring dualism, in all there was an endless antagonism between the material and the spiritual, between the world of sense and the world of ideas. Could the Eleatics have found a ground of union between Pure Being and the sensible world, or Plato between his ideas and the world of sense, a monistic philosophy would have been the result. About the year 400 B. C. we have Xenophanes the Eleatic propounding the proposition that "all is one," and his follower Zeno teaching the doctrine "of the one sole, simple, and immutable being"; but they could not retain the monistic idea, nor build it up into a definite philosophical system; Pure Being and Phenomenal Being were unreconciled, and until a reconciliation was brought about their philosophy could be only a badly concealed dualism. Even the master mind of Socrates could not discover the necessary connexion between the different branches of philosophy, so he was content to devote his whole time to problems of ethics and the social life of man.

The life of the Greek people as a whole owed its temporary joyousness to its complete unconsciousness of the inherent difference between the material and the spiritual. Their gods, their state, and their national life were all so closely bound

together that the people were rendered incapable of looking, as it were, at things as outside of, or as separate from, themselves. When their self-consciousness did develop sufficiently to enable them to distinguish between things spiritual and material, their light-hearted joyousness disappeared, not having had any better foundation than a child's delight in things bright and beautiful. In Neo-Platonism we see the last attempt of the Greek philosophers to establish monism; to the Neo-Platonists the antagonism between spirit and matter was distinctly apparent, and the method by which they sought to unite these two opposites showed a marked advance in their intellectual power; they conceived that the ground of union lay behind this dualism. Plotinus was the most celebrated exponent of this school, and under his guidance dualism was explained away by mystical references to a Pure Being, One and Indivisible, which was at once the beginning and the end of all things. Neo-Platonism was not a perfect monism, because Plotinus and his followers were at war with the body. The expression of the perfect monistic idea with respect to the connexion between body and soul is to be found in a verse from R. Browning's "Rabbi Ben Eyra":

" . . . Let us not always say
Spite of this flesh to-day
I strove, made head, gained ground upon the whole!
As the bird wings and sings
Let us cry, 'All good things
Are ours, nor soul helps flesh more, now, than flesh helps soul! '"

The hope that by the mortification of the flesh the soul would advance in holiness, has been from all times one of the extremes into which thoughtful men seeking peace have fallen. With the dawn of Christianity Greek philosophy languished and died, though Christianity did not fight with philosophy but with prejudice in the earliest days of its life. This new religion was held to be a special and direct revelation from God, yet in its cardinal doctrine we find the very thought that men had been for so long striving after, namely, the reconciliation between spirit and matter, between man and that God who had always seemed so very far away. It was not as if Christ was a leader of men simply by reason of a superiority in His manhood alone, but because He claimed to be divine, in the same sense that God is divine, and because of this claim, because of the astonishing greatness of this claim, Christianity has been especially open to endless attacks and to severe adverse criticism. If we hold that the intellect of man is his most godlike attribute, we will be very ready to believe that by his unaided intellect he would naturally attain to certain truths, which, when a direct revelation should come from God, would be seen to be the foundations upon which that revelation would be built; this would not come as a strange and foreign idea thrust upon man from without. Christianity came, taking hold of and making real that shadowy idea of a unity in opposites which had been so dimly apprehended by man. True, it introduced a greater amount of mysticism than the generality of men could grasp; but to coun-

terbalance this, there was the manhood of Christ, His very practical life, and His care of all things pertaining to the bodies of men. If this wonderful mode of reconciling the material and the spiritual could only have been appreciated by the followers of Christ,—religion would never have lost its philosophical side, and the unfortunate antagonism between the two would not have occurred: but almost immediately upon the death of Christ we find His disciples condemning the knowledge and wisdom of men. If Christ's religion is to spread and increase amongst all nations, as prophesied by its founder, its position must be strengthened on all sides. It must be the religion of the literary and the learned as well as of the simple and ignorant; it must have its roots in ethics, in philosophy, in art, and in science. The best proof that it underlies all things intellectual, physical, and moral is found in the fact that its truths can be reached by other than the beaten paths of revelation. St. Paul, when preaching to the Athenians, desired that they should understand the close relation existing between men and God; he could find no better way of expressing himself than by quoting to them the words of their own poet Cleanthes, "We, too, His offspring are." Bishop Lightfoot writes: "We might 'imagine ourselves listening to a Christian divine when we read in the pages of 'Seneca that 'God made the world because He is good,' and that 'as the good 'never grudges anything good, He therefore made everything the best possible,'" and sayings very similar to those we find in the writings of Plato. We are even reminded of the words of Christ: "For whosoever shall do the will of my Father 'which is in Heaven, he is my brother, and sister, and mother," when we read in Seneca, "Between good men and the gods there exists a friendship,—a friendship do I say? Nay, rather a relationship and a resemblance." Scores of passages could be cited from the writings of Seneca and others of the sages teaching precisely the same ethical doctrine, and having the same mystical meaning as the teachings of the disciples of Christ. Heaven and Hell were not first made known to man by the revealed word, there is the Olympus and Hades of the Ancients, materialistic in conception, it is true, but not more so than the Heaven and Hell of Dante. The immortality of the soul is not an essentially Christian doctrine, it was held by the Egyptians and the Assyrians at a very early date. Of course, it is not contended that all these doctrines and ideas were presented in as pure a form as Christ presented them, but the minds of men had been travelling towards them naturally, and philosophy had long been conscious of the idea which showed itself as the core, the very essence of Christianity. It remained for Hegel, that great monistic philosopher, to unite the Christianity of the spiritualists with that of the philosophers.

It may be said that thought at the present day has been so saturated by Christian spiritualism that it is impossible for Christian truths to be reached by independent means, but this cannot be maintained with regard to such a philosopher as Hegel; it must have been clear to him that only by emptying his mind of all preconceived ideas could pure philosophical truth be attained to. If the preconceived

ideas were true ones, then the mind would be guided back to them by the light of reason. It was not from clinging remnants of revelation that Hegel built up a monistic philosophy and a religion which in its last analysis was Christian truth. Kant, Jacobi, Fichte, and Schelling were Hegel's immediate predecessors in philosophy; their aims were similar to his, but their systems were not so successful: they stumbled and fell into the pitfalls of dualism.

There is one important thought in Fichte's philosophy, however, which is worthy of note here; Schwegler explains it in the following words: "It is reasonable to expect on the part of God, as moral regent of the universe, the communication to men of pure moral principles through the medium of the senses, or the revelation of Himself as lawgiver to them by means of a special and appropriate manifestation in the world of sense. An actual revelation would be here, then, a postulate of practical reason." Both Fichte and Schelling occasionally drew very near to the monistic goal which Hegel so triumphantly reached. Fichte, when he speaks of the necessary union between God and man, and of the important part played by Renunciation in the life of man, and Schelling when he teaches that "unless there be a dark ground, a nature, a negative principle in God, there can be no talk of a consciousness in God." Again, "Naturalism would think God as ground [immanent], theism as cause of the world [transcendent], the truth is the union of both characters, God is at once cause and ground." But they only touched on those thoughts, rose to them, as it were, by intuition; it remained for Hegel to incorporate them into a definite system of philosophy. It was by profound study and much painful thought that Hegel reached the fundamental axiom of his philosophy. He saw clearly that it was on the rock of dualism that all previous philosophical systems had been wrecked: Christianity itself was in some danger from the same cause.

All along the line philosophers had fallen either into materialism or idealism, and earnest thinkers into dogmatism or atheism. Idealism was no cure for materialism, nor blind, unreasoning faith for scepticism. The unity of opposites then was the foundation upon which Hegel determined to build up his philosophy; he set himself "to show that the kingdom of nature and spirit are one in spite of all antagonism," nay more, "that this antagonism itself is the manifestation of their unity."

Touching the success of this theory in the province of metaphysics, we find Hegel's system of logic quite able to make good the position which he took up. The old difficulty between *a priori* and *a posteriori* knowledge disappears before the magic of this logic. There had been an attempt to reconcile the theories of Leibnitz and Locke by a compromise, viz., that we receive facts from without but that the corresponding ideas are within; Hegel saw the inadequacy of the compromise,—he was of course aware of the opposition, but behind this opposition he discovered a unity,—*a priori* and *a posteriori* knowledge was one and the same thing, only viewed from different standpoints. The relation of the object thought to the

subject thinking is found in the evolution of the mind, for the subject thinking receives a *posteriori* knowledge by virtue of a process of evolution and so transcends the opposition between fact and ideas. Hegel asserted that all other metaphysical difficulties would be solved by the same monistic principle, as also could the difficulties in science; but with regard to these latter he realised that there was a very "hard husk" to break through, yet he was quite sure of the principle. He writes: "The nature of the universe, hidden and shut up in itself as it is at first, has no power which can permanently resist the courageous efforts of the intelligence, 'the world is intelligible, as it were, and is in union with our intelligence.'" Now when we come to view this fundamental doctrine of Hegel's, namely, the Union of Opposites, from a religious standpoint,—for any truth seeking to be universal must sooner or later justify itself to religion,—we find it in full concord with the purest and best religion that the world has ever seen, the religion of Christ. The unity of God and man is the kernel of Christian truth, Christ in His person being at once God and man, the two opposites, the Divine and Human closely connected, merged in Him. If that is the central truth of Christianity, and no Christian can deny it, the central truth of Hegel's philosophy is identical with it. He did not arrive at this perfect reconciliation by the study of Revelation, he did not seek to force the connexion, but steadily followed the glimmering light of truth till it broke into a glorious day. Moreover, when Hegel brings his fundamental doctrine into the realm of man's ethical and spiritual life, it meets with the same signal success. He, with logical reason for his guide, reached the same conditions as do the theologians who believe themselves led by the spirit of God in an especial and peculiar way. In company with the mystics and the divines, Hegel saw a very lucid and real meaning in the words which form the centre of Christian truth: "For whosoever would save his life shall lose, and whosoever shall lose his life for My sake, shall find it." Is this not the essential point, the innermost meaning of his philosophy? In man's life there is the positive and the negative, the self and the not-self, the two opposites with their ground of union—God. If we die to what is particular, to what is individual, we shall be born again to what is universal, to what is God-like; this, then, is the meaning of "dying to live." It is not the denying of one part of ourselves in order to fully realise the other part; but it is a dying to everything that is divided, partial, or contradictory, in order to live in unity and in God. Here, then, we have the essential doctrine of Christianity proved by a logical and philosophical method. Men are every day becoming more and more intellectual, more logical, more reasoning; man's intellect has discovered for him thousands of the wonderful secrets belonging to nature; to his intellect he owes his exalted life, art, literature, and science. Can he throw away this trusty staff on the threshold of his religious life and say he has no further need of it? No, he cannot. Christianity must be grasped not only by the emotional, spiritual side of man's nature, but by his reason and his intellect. Hegel has shown us how this can be done, his philosophy is all-embracing, monistic, true; he not only can find room

for the beautiful and the good in art, nature, and conduct, but he has a place for the evil and the ugly, behind all things there is the Eternal One. His religion does not admit into it the idea of an everlasting fight between God and Satan, nor his philosophy, the idea of a war between matter and spirit. If it required the gift of inspiration to write the Gospels and Epistles, no less does it require the same gift to understand the dark sayings in the Old Testament. Hegel, then, must have received that gift, for those strange words in Isaiah are philosophical truths to him: "I am the Lord, and there is none else. I form the light, and create darkness; I make peace and create evil; I, the Lord, do all those things."

EMILIA DIGBY.

TICEHURST, SUSSEX.

INDIA—RELIGIOUS, POLITICAL, SOCIAL—OF 1895.

The White City has disappeared. The show of industry and art has vanished from sight. The august gathering of the Parliament of Religions lasted for a few days and ultimately dissolved. But the practical results of these movements live and are felt by us in whatever direction we turn our attention. The year 1893 gave to America congresses on politics, religion, science, and what not, all of them within a short space of six months. India is slowly passing through a similar condition, and the year 1895 will live in the memory of her people as being full of memorable events, religious, political, and social.

The growth of a nation, in order to be healthy, must include all phases of its life. The abnormal growth in one direction brings on diseases which are difficult to cure. Undue attention paid in India for centuries to the formal side of religion brought on subjection, incapacity to cohere as a nation, and many social evils. Happily, under the British Government, the study of history and politics has brought a large portion of the educated people of India to their senses, and the result is that India, at the beginning of 1896, is totally different from the India of 1857.

The great religious event of the last year is the Dharma-Mahotsava—the Religious Assemblage—held at Ajmere, in Rajputana, on the 26th, 27th, and 28th of September. Religious gatherings have taken place in India in the past on different lines. The Council of Ashoka, held in the third century before Christ, was an assemblage of Buddhist priests only. Neither the Jains, nor the Brahmins, nor other sects prominent in those times were invited to attend. The religious gathering of Akbar, the enlightened Mohammedan emperor of the sixteenth century was more cosmopolitan, indeed, but the number of religions represented was a small one, and,

besides, the emperor's object was to found a new religion, in which, of course, he did not succeed. It was reserved for America, for the enlightened people of the United States, and for the liberal workers in all religions of the union to inaugurate a movement in which representatives of all the great ethnic religions of the world were invited to meet in brotherly friendship on a common platform: to admire and to love all that was best in the different faiths and creeds. In the words of Prof. Max Müller, "I repeat once more, without fear of contradiction, that the 'Parliament of Religions' at Chicago stands unique, stands unprecedented in the 'whole history of the world.'"

But long before the Columbian Exposition was held and the World's Congress Auxiliary was planned, a noble son of India, the great Kiyashta reformer, now an ascetic, Swami Shivgan Chandji, had conceived the idea of convening a gathering of the leading religionists of India and asking them to present before a suitable audience the tenets of different faiths in connexion with vital problems of life in a popular form. But India, while it is the most tolerant of all tolerant countries, and the most conservative of all conservative countries, a new idea takes time to meet with the approbation of the people. And so it was with this. It was only in the latter part of September, last year, that it was actually carried out.

The objects of this religious movement were:

1. To promote the true religious spirit among men of all faiths.
2. To afford a common platform for the advocates of different religions where each can show to the best advantage the vital principles of his faith without in the least entering into controversy with or hostility to any other faith.
3. To place within easy reach of enlightened and educated men trustworthy information about every form of religion and leave them to judge of the merits of the same.

The idea was met with responsive co-operation from all parts of the country, and soon a reception committee was formed in Ajmere to organise means for receiving and accommodating delegates of different faiths, with Pandit Saligram Shastri, Sanskrit professor of the Ajmere Government College, as president. The programme and other matters were settled in a short time. Provision for the accommodation of delegates was adequately made. The north and the south, the east and the west sent their representatives.

At half-past eleven on the morning of September 26, representatives of eighteen different faiths met in the gardens of the Maharaja of Kishengad, where a special pavilion, with a platform, was erected. To this pavilion they repaired in the form of a procession, Pandit Saligram leading. The place was filled with an appreciative audience. A large gathering of all classes of people ready and willing to hear representatives of different faiths expound their respective tenets in all earnestness proved that the first object of the assemblage—that of promoting a religious spirit among men of all faiths—was fulfilled by the speakers as well as the audience.

With solemn prayer and invocation, the proceedings of the conference were opened by Pandit Saligram, who, in his able address of welcome explaining the objects of the gathering, offered the most hearty reception to the delegates. Preliminary formalities being over, R. B. Shyám Sundar Lál, Prime minister of the Kishangarh State, was appointed the moderator to preside over the deliberations of the congress. His inaugural address was pervaded by a spirit of large-heartedness and tolerance. He referred to the fact that religious reform and tolerance were the prime factors of a nation's civilisation, and that, leaving out of consideration the mere formalities and externals of a religion, the fundamentals, the essential principles of all the religions the wide world over were the same; that peculiar circumstances, local to a particular country, add formalities which are inessential to a country with different circumstances; that gatherings like this were sure to promote the religious spirit among all classes of people and would create and continue feelings of tolerance and respect for the different religions and faiths.

For three successive days addresses were delivered by the representatives of eighteen different faiths, Mohammedanism and Christianity included. On the last two days, in the absence of Mr. Shyám Sundar Lál, Mr. Fateh Chand Khabia, a Jain barrister and judge in Ajmere, presided. Hindus and Mohammedans, Jains and Sikhs, Arya Samaj and Brahmo Somaj, Vedantins and Vaishnavas, orthodox and heterodox, were all heard with the most perfect cordiality and friendliest attention. The second object of the religious conference—that of affording a common platform for the advocates of different religions, where each can show to the best advantage the vital principles of his faith without in the least entering into controversy with or hostility to any other faith—was literally and satisfactorily fulfilled.

The questions dealt with in the Conference of Ajmere are, indeed, very important, and any light thrown on them is sure to be of great good to the religious interests of India—aye, of the whole world. The restrictions of time and distance are removed in this nineteenth century by the steam engine and the electric telegraph, and the questions that now relate to the religious interests of India are as important to her as to the rest of the world. It is not hinted that the discussion or consideration of those questions now would throw more light than was done when the philosophers of the Orient grappled with the most knotty problems of life on the banks of the Ganges thousands of years ago, whose profound penetration and deep insight made Max Müller say: "If I were asked under what sky the human mind has most fully developed some of its choicest gifts, has most deeply pondered on the greatest problems of life, and has found solutions of some of them which well deserve the attention even of those who have studied Plato and Kant, I should point to India." But in an age in which the spiritual standard must be raised, the consideration of the mighty problems of life becomes an efficient means of leading us to the real or imaginary goal that is set before us by all the great religions of the world. The question of God, soul, transmigration, sin, bodily health, family

life, social life, revelation, mediator, saviour, incarnation, and salvation, are very momentous, and the discourses on these various subjects gave to the audience at Ajmere a unique opportunity of comparing the views of one faith with those of others. Comparisons made in private are generally tinted with prejudice unless the comparer is pre-eminently open to reason. But in a gathering like that in Ajmere points are urged on the minds of the audience which are generally ignored when one reads books simply to emphasise his preconceived views. Considerations which seemed trivial to him formerly are now placed before him in a new light and perhaps with a different interpretation. What formerly seemed essential may now appear formal and even unnecessary—nay, irrelevant. In this way the third object of the Mahotsava is fulfilled—that of placing within easy reach of enlightened and educated men trustworthy information about every form of religion, leaving them to judge of the merits of the same.

The closing addresses of the moderator and delegates were touching indeed. They met for a solemn purpose, for a holy purpose, for God's purpose, and it was in God's way, in a peaceful and loving way that they departed. They met to hear the words of wisdom from one another, and all addressed and were heard in a spirit of gentleness and tolerance. This was the universal worship, the tribute of our hearts that we made in spontaneous gratitude and devotion to the Infinite. Our worship in this sense had no voice, had no particular ceremony, no outward expression of the sense, but, it was the prostration of the soul before the supreme in adoration of that which is holy and pure, unchangeable and eternal. We testified to the fact that religion, not a religion, is the very life and soul of man, and, when rightly understood, is answerable for our destiny here and hereafter. In India this fact has been known from earliest times, which has justly given to her the name of the Mother of Religions. It has answered the wide world over, I should say, for our spiritual regeneration and moralities of life, and has evolved among all the nations of the earth devoted lives, spotless characters, tireless regenerators about whose names the white light of immortality ceaselessly shines. This was the grand lesson that we learned at the Dharma-Mahotsava in Ajmere as much as at the Parliament of Religions in Chicago.

But the people of India, say our opponents, are merely speculative, visionary, unpractical. If one tries to reach the ancient literature of India and dive deep into it, he shall know what the great sages in the past have said about politics, law, war, and polity in general. True it is, and the Hindu has to confess most lamentably that priestly innovation and exclusiveness put India into dire distress and subjection; selfishness kept the masses in ignorance and dried up the source of material advancement. This, added to foreign rule, disintegrated the Indian peoples and made them politically valueless. Happily, under the British rule, in spite of many shortcomings of Anglo-Indian officials, India has taken a step in the right direction, and her political advancement is as wonderful as the religious.

VIRCHAND R. GANDHI.

BOOK REVIEWS.

LEHRBUCH DER NEUTESTAMENTLICHEN THEOLOGIE. Von *Heinrich Julius Holtzmann*, Dr. und Ord. Professor der Theologie in Strassburg. Freiburg, i. B. and Leipzig: J. C. B. Mohr. 1896. Lieferungen 1-4. Price, M. 1.50 per Lieferung.

New Testament theology has only recently been developed into a science. Formerly the dogmatic interest of the various denominations was too strong, and the New Testament was used simply for the purpose of procuring evidence of the truth of their particular doctrines. The name of Biblical theology as an independent discipline was used first in 1708 by Haymann, but it was not till 1787 that Gabler spoke of it as an independent science. His colleagues Lorenz and Bauer made a distinction between Old and New Testament theology from 1800 on, and they also suggested to Pöhlitz, Cludius, and Schwartz the idea of a scientific reconstruction of original Christianity. The more dogmatic interests disappeared, the more historico-critical investigations gained the upper hand. In connexion with this independent development of New Testament theology, grew up also the New Testament exegesis which from the direct bearing of a historically correct conception of original Christianity upon the present doctrines of the church proved to be of all-absorbing interest. Here must be mentioned such great historians as Neander with his compendary knowledge of all ecclesiastical literature. He was followed by Reuss, the first theologian who viewed the New Testament under the aspect of an evolutionary process, claiming that there was first Jewish Christianity, then Paulinism and other attempts at reconciling Hellenism and Judaism, and lastly the theology of St. John. Upon this foundation the school of Tübingen represented by Schwegler and Baur took its stand. The latter places the doctrine of Jesus and of the Apostles at the beginning, and contrasts in the first period of the development of the church the doctrines of Paul and Saint John of the Revelation, which are followed by conciliatory attempts represented in Mark, Luke, and the Paul's Epistles to the Hebrews, Ephesians, Colossians and others. The latter are a transition to the formation of the dogmas of the Catholic Church, best represented in the pastoral letters and in St. John. Hilgenfeld sides with Baur, while a reaction against the Tübingen School is represented in the names of Ewald and Ritschl. In more

modern days we have the works of Weizsäcker, Hausrath, Oosterzee, Köstlin, Weiss, Beyschlag, and especially Pfleiderer.

Holtzmann is one of the most prominent investigators and interpreters of the New Testament, and there is no one better informed in this line of work than he is. His *Lehrbuch* and his *Handcommentar* to the New Testament are the best that can be had, and are recognised as such. The author is the man to give us also a *Lehrbuch* of New Testament theology.

Professor Holtzmann's present work, which has now reached four instalments and will be perfected in twelve, is, like all his other books, a concise and impartial summary of the present state of investigation. He condenses the work of his predecessors and presents rather the general advance made by them as a whole than an investigation of his own.

The four instalments before us contain two parts: first, Jesus and the Evangelists; and secondly, Paul and the Post-Apostolic literature. Neither is complete in the copy before us, the former breaking off abruptly at page 144, the second at page 240.

After a review of the literature of New Testament theology and a sketch of its development as an independent discipline, Holtzmann characterises the period of Nomism in the history of the later Judaism. He describes, according to the various views advanced, the contrast between Phariseism and Sadduceism, the modes of Jewish tradition, the method of interpreting the law, the development of the Apocalyptic literature, which is a product of the disappointments and sufferings of the Jews who fulfilled the law punctiliously while God did not seem to make good his promises. But the end was not yet; God can be relied upon. Therefore they hoped for a Messiah who would take a terrible revenge on the heathens, restore Israel to its political independence, or even make it the ruler of all nations. Thus the Messianic idea assumed definite shape and led to various conceptions of the nature of the Saviour who, however, was always regarded as a political restorer of Israel. Some thought that he would be a scion of David's house, while others, especially the priestly aristocracy, expected him of the tribe of Levi. The former gained the upper hand, but such were the views common among the people, that a sister-in-law of Herod the Great could think of finding the Messiah either in her husband or in one of her sons. Moral qualities of the Messiah and superhuman features were not expected of him. The people pictured him in their minds rather like Judas-Maccabee than like any one of the Prophets.

Since Alexander the Great the Jews had spread among the nations of the Roman Empire without surrendering their religion and Jewish customs. They became mediators of the monotheistic idea and helped to prepare the world for the acceptance of Christianity. The translation of the Old Testament into Greek, commonly called the Septuagint, was a condition of the *pleroma*, the fulfilment of the times. Without the Greek Bible we might have had the provincial literature of an Aramaic religion, but no New Testament theology. All Greek sages became greatly inter-

ested in Judaism on account of its stern monotheism, and many joined the Jewish faith, without, however, accepting either circumcision or the Mosaic law. They remained mere guests in the synagogues of Israel and a few only became proselytes.

While thus the Greeks were prepared for receiving a religious revelation that would come from the Jews, the Jews of the *diaspora* themselves became acquainted with Greek philosophy. And they were astonished at the purity and precision of Aristotle and the grandeur of Plato. The doctrine of the immortality of the soul so plainly set forth in the *Phædo* made a deep impression on them, and the result was a peculiar literature in which Greek and Jewish thought were blended, leading on the one hand to such Apocrypha as the Book of Wisdom and on the other hand to the philosophical conceptions of Philo, who developed the idea of the divine Logos.

By the side of the conservative Pharisees and the Hellenising Sadducees, a sect arose, apparently of foreign growth, the members of which called themselves Essenes. Their ascetic tendencies are un-Jewish; their reverence for the light and the sun point to Parseeism; their condemnation of the oath and of slavery reminds one of Neo-Pythagorism, and yet they are older than the Neo-Pythagorean school, for we have evidences of their existence in the second century before Christ. Thus they may be regarded as an independent but parallel development of the tendencies which prevailed in the whole Roman Empire and produced such philosophies as Neo-Pythagorism and Platonism. The underlying theory in both Alexandrianism and Essenism appears to be an endeavor to get rid of all that is sensual and to come into close contact with God who is conceived as pure spirit.

The main problem of the New Testament theology is apparently the personality of Jesus himself. Holtzmann does not believe that the character of Jesus can be explained as a myth. The mysterious power which Jesus manifests is so original, so peculiar, so individual that it could not be the product of speculative thought. We are confronted here with a reality, and everything we read in the synoptic Gospels about Jesus tends to corroborate the genuineness of the picture. The religion of Jesus is not the product of school doctrines. He who would try to explain his appearance as a combination of the conflicting theologies of his time will miss the most characteristic feature of his life. Jesus apparently nourished his soul at a well of living waters and did not draw his inspirations from books. Thus nature is mirrored in crystal-clear reflexion in his speeches. His imagination does not suffer from Oriental exaggeration. His mind is not distorted by Rabbinical wit or subtleties, and there can be no question about it that he is the child of Galilee, of the country which is described as a continuous garden where palms and figs and flowers grow. If he had grown up in a city like Jerusalem he would not have introduced similes and invented parables of provincial life as he did. His native country is the background of all his speeches and only a Galileean could expect to find figs at Easter-time in Jerusalem. There is nothing gloomy in his views of nature. He speaks of God's sun and its radiance, of the birds under the sky, and the flowers in the fields,

of the rain that pours down on the just and the unjust. Any one who uses such language is in no danger of the theologian stifling the man.

The life of nature apparently made a deep impression upon Jesus, but he concentrated his attention even more upon the life of man; and here again we find the social conditions of Galilee, not the city-life of Jerusalem, nor views which might be uttered in the schoolroom. Jesus was familiar with the joys and sufferings of the country and the people, and thus he was enabled to voice the deepest religious sentiments. God was to him like the house-father, and there are many pictures of family-life in his parables. He speaks of the children sitting round the table with their parents, the dogs waiting for the crumbs that are thrown down to them, and when it is dark, of the light that is put on a candlestick, which gives light to all that are in the house. Neighbors and friends are mentioned who are invited on festive occasions (Luke xv., 69). The children sleep in the chamber together with their father (Luke xi., 7); and he does not tire of speaking of children as being nearest and dearest to his heart.

By the side of these friendly pictures of family life Jesus also mentions the oppressive social conditions of the laborers, servants, or slaves, and of the hired workman in the vineyards. He frequently mentions the good man of the house who is the head slave, the overseer of the other servants, either proving himself to be reliable or being a tyrant oppressing his companions. The slave girls are alluded to who work the hand-mill and who must sleep two in a bed. All of them are subject to the cruel laws of the times and depend upon the will of their master. When they have tired themselves in the fields they are still kept busy in the house (Luke xvii., 7-9). They serve at table, and it is a distinction if they are entrusted by their master with money affairs. Jesus repeatedly introduces the master of the house in his attitude of going over their accounts and computing the returns of the entrusted money. When the master travels the servants wait for his return, and remain awake during the night.

But the hardships of slavery which are introduced without further reflexion in the sermons of Jesus, are not the worst features of the social conditions of those days. The greatest misery is represented in the cripples and the beggars on the streets, the tramps on the highroads, the thieves in the cities, the robbers in the woods, the malefactors who carry their own cross, imprisoned debtors, etc. We learn of the transactions of usury, bills of indebtedness, the severity of creditors, the contentions between parties on the way to the judge, punishments by the court, etc., etc.

Yet while Jesus describes scenes from life such as he must have witnessed in his childhood and early youth, he was at the same time not unfamiliar with the Scriptures. His speeches show a special familiarity with Deutero-Isaiah and also several of the Apocryphal and Apocalyptic writings. In Luke xi., 49, he quotes from a Book of Wisdom which is no longer extant, and there are passages in Matthew and Luke which contain echoes of Jesus Sirach.

Jesus must have learned reading and writing, for we are informed that he read chapters from the Prophets in the synagogue and addressed the Pharisees repeatedly with the words: "Have you not read?" He quotes from the history of his people and is full of Biblical reminiscences. It is true that he makes mistakes in his exegesis, but he proves himself a genuine prophet by the freedom with which he introduces his interpretations. The Scriptures are to him only incidental and accessory corroborations of the religious experiences which he had had himself, and thus he shows an assurance and superiority, which, although he never places himself above the Scriptures, makes it possible that he speaks with authority. The Scriptures are to him like a glass in which he sees his own face and behind it the face of God.

The influence of Essenism on Jesus has been a matter of dispute. His condemnation of the oath, his celibacy, and the communism involved in the idea of the surrender of property, the redundancy of temple service and bloody sacrifices indicate some connexion between Jesus and Essenism; but Holtzmann is inclined to regard these coincidences as being due to the moral ideals of the times, for Jesus was very different from the Essenes, as he did not place his light under a bushel as they did in their retirement. They represented a separatistic sect while he lived in the world and communicated with all the people, scribes and Pharisees, publicans and sinners.

The Pharisees were apparently that party with whom Jesus in the beginning of his career was most closely connected. He appears as a guest in the synagogues. He knows their methods of teaching, he uses their modes of argument and proves his case on the authority of Scriptures, in exactly the same style which they were wont to use. He discusses problems such as that proposed to Hillel, Which is the first and the greatest commandment? (Mark xii., 28; Matth. xxii., 36.) He introduces the term "righteousness" as frequently as did the Pharisees, only that he deepened the meaning of the word: It is still the dominant theme in the Sermon on the Mount. Where he combats the Pharisees, he does so with their own weapons. He discusses the worth of almsgiving and the reward in heaven. He agrees with the Pharisees on the doctrine of resurrection against the Sadducees, and it is not mere chance that Paul the great apostle who completed the mission of Jesus came also from the school of the Pharisees.

But the main difference between Jesus and the Pharisees is his more natural and more human conception of the righteousness of the law. In his explanation of the law, his own genius asserts itself. Imbued with the experiences of real life he applies his religious views to the conditions that surround him, and is free from all scholasticism and scholarly prejudices. He is not a professional scribe but a self-taught man who bears the prototype of his religious ideals in himself, and this gives him a self-reliance which cannot be acquired by book-learning. His belief in God is not born in the storms of despair, but it appears like sunshine upon the quiet sea of Galilee.

Considering the character of Jesus, such as is here described, it is natural that he possesses no special method of teaching. He does not use the abstract definitions of the schools. He shows no doctrinary reflexion, nor any dogmatic system. He is a man of the people and not, as St. Paul and St. John, a theologian. He never cares to solve problems of science. He even neglects the order and consistency of his thoughts. He is always bent on solving practical questions which he does by his faith in a world of divine truth. He never aspires for lucidity, but always for a popularly impressive expression of his thoughts which are communicated as directly as possible. We must understand every single word from the motives which prompt it, and in order to judge of his personality we ought first to be able to translate his speeches back into Aramaic, for they have suffered greatly by being transcribed into a Greek garment. This is a work which has only recently been begun by Arnold Meyer.

The originality of Jesus appears mainly in his application of religion to practical life. As the roots of his view of nature and of man are taken directly from life, so he applies them directly to the needs which he sees about them. He is more a child of nature than the theologians of later centuries would have it.

While Jesus has a deep reverence for the sacred traditions of his nation, and while he is willing to fulfil the law, he sees no need of obeying all the various injunctions which the Pharisees and scribes prescribe. The law as it was understood in Jesus' time was a heavy burden upon the people. It presupposed a study, for who could know all the rules about prayer, about washings, about the tithes, sacrifices, and ceremonials? The law of the Jews had become a religion for the rich. It was utterly impracticable for poor people. The parents of Jesus themselves were unable to comply with all the demands of the law, for we know that only once they travelled to Jerusalem, a journey which, according to the law, had to be made three times a year by a good Jew. We have the express statement that Jesus himself did not observe the fasts and that he did not hesitate to break the Sabbath. The mass of the people lived in utter ignorance of the details of the law, and considering the burden of the law, we can now appreciate that Jesus praises the unlearned and uneducated by saying "Blessed are the poor in spirit." He comes with a Gospel for the poor. He addresses not the pious Jews only, but the sinners, those who by the pressure of circumstances no longer continued to observe the law and formed a class by themselves upon whom the orthodox Pharisee looked down with contempt. The parents of Jesus themselves probably sat down to dinner without washing their hands according to the Levitic injunctions, and it was a matter of course to him that they did not thereby defile themselves. It must sometimes have been difficult for a carpenter when at work to obey the circumstantial commands of eating his meal in the orthodox fashion. Jesus knew that the law could mean purity of heart and not of hands, and he understood that not the food that enters the mouth but the words that come out of the mouth can defile the character of a man.

It is the directness of his experiences which conditions his superiority and the breadth of his mind shown in his communion with the pious Jews as well as with the publicans and sinners; and this is not the product of study, and of consideration, but natural instinct, which becomes more and more a conscious opposition to the narrowness of Phariseeism. Thus the gist of his doctrine is contained in the words, "The poor have the Gospel preached to them," and St. Luke says: "The Son of Man is come to seek and to save that which was lost." But his salvation does not consist in urging the severity of Phariseeism, but in preaching the Kingdom of Heaven, which since those who are invited do not come, will be inherited by the crippled, the lame, and the beggars from the street.

So much for the first part, and the most important problem of New Testament theology. We hope to recur to Professor Holtzmann's work as soon as the remainder is published. P. C.

DIE PROPHETISCHE OFFENBARUNG NACH WESEN, INHALT UND GRENZEN. Unter dem Gesichtspunkte der alttestamentlichen Weissagung geschichtlich und psychologisch untersucht von *Dr. Paul Schwartzkopff*, Professor in Wernigerode. Giessen: J. Ricker'sche Buchhandlung. 1896. Pages, 169.

A new theology is being built up, not in the quarters of the old rationalism, which in Germany are gathered in the *Protestantenverein*, but in those circles where the orthodox traditions prevail; and among modern theologians Paul Schwartzkopff has offered to the world in these latter days most valuable contributions which are distinguished by philosophical method and critical ability. Men like Kuenen, Wellhausen, Cornill, Harnack, Holtzmann are historical scholars of first degree; Schwartzkopff's specialty lies in another field; he is sufficiently versed in the works of these great pathfinders to be perfectly at home in Biblical theology, but he concentrates his investigations upon the fundamental questions which are to be decided as a matter of principle rather than as a historical fact. For this purpose he wrote his treatise on the fallibility of Jesus.¹ Here the historical problems are brought under a philosophical aspect, in which, in the spirit of the present age, psychological considerations are most prominent. The present treatise on "Prophetic Revelation" is quite similar in kind and forms an important part of the whole system, promising to be very acceptable to theologians as the best solution of the various difficulties into which the traditional interpretation of religion, through the rapid progress of all the sciences, has been drifting.

Schwartzkopff approaches the problems of exegesis, text-criticism, and interpretation not by expounding the sundry individual passages, but by selecting salient instances and developing the characteristic features of all of them. In the book before us, he undertakes to determine the nature of the prophetic revelation in both

¹*Konnte Jesus irren?* Unter dem geschichtlichen, dogmatischen und psychologischen Gesichtspunkte principiell beantwortet. Reviewed in *The Monist*, Vol. VI., No. 3.

its form and its substance; he seeks to show how the purity of the substance of the revelation (*der Inhalt*) is dependent upon its form, and that thus in its form it must find its natural limits. The prophet has a mission that appears in his sermons, which are partly threats of punishment, proclaiming God's wrath on account of the sins of the people, and partly promises of restoration on the condition of penitence and obedience. In prophecy the national conscience finds its utterance, and thus the prophet is a politician. To be sure, he does not make himself the head of a faction, nor does he organise a party for political ends, but he voices the people's indignation at social wrongs or political errors committed by those in power. He is the guardian of the souls, the *Seelsorger* and pastor of the people and there is in the prophet a subjective assurance that what is of God will stand, but what is ungodly will fall. This in fact is the burden of all prophecy, which accordingly is defined as "the expression of the moral-religious sense applied to the destiny of God's people and the realisation of God's kingdom on earth" (p. 167). But in recognising the divinity of the substance of prophecy we should not overlook that it is poured into vessels of clay; the form of prophecy is individually and historically conditioned, and every prophet in portraying the consequences of God's wrath and the promises of his mercy, colors his picture with the paints that he finds in the paint-pots of his home (p. 101). Thus the human element is introduced as a matter of necessity, and with it come error and fallibility. In order to be a prophet in whom the perfection of truth is reached, the prophet must have attained to the perfection of the God-man, which can be said of none of them. Their vision is more or less dimmed; they see the externality of things and have not as yet understood that the external forms of worship and of the kingdom of Israel are transient and indifferent in comparison with the foundation of a kingdom of God on earth that would be of a spiritual nature without any theocratical forms. Thus the prophets are subject to error in proportion to their inclination to see the external and to mistake the external for the spiritual. The letter of prophecy is not the thing to be minded, but the burden and spirit. There is a nucleus of truth, however, even where error prevails, and this nucleus of truth (*Wahrheitskern*, p. 102) consists in the proclamation of the message of the coming of the kingdom.

The most orthodox theologians freely concede the errors of prophecy. Schultz (in his *Alttestamentliche Theologie*, fourth edition, 1889, page 267) says:

"Tyre was not, as Isaiah prophesied, conquered by the Assyrians in order to rise after seven years to its former prestige and to donate the fruits of its rich commerce to Zion (Isaiah, xxiii, 1, 15 et seq.; Ezekiel, xxvi, 1-28 x; see also Smend, "p. 174). Babel did not fall under the assault of Koresch, and was not doomed to destruction as was prophesied by the prophets of Israel (B. J. xiii, 14; xxi, 40-66). Damascus is still standing even to-day and has not been taken off the earth. The Egyptians were neither conducted to Assur nor to Babel into exile (Isaiah, xvii, 1; ix; Jer., xlv; Ezekiel, xxix). Egypt and Assur were not united together with Judah into a triple kingdom of God (Isaiah, xix, 23 et seq.). Jerusalem was

"not restored on the return from the exile, as the prophets had hoped (B. J., xxxv, "xlii, xlviii, liv, lx, lxii). A victory of the tribe of Judah over Phœnicia never "came true (Joel, iv, 4). Thus almost every prophecy exhibits to him who examines it closely a vista into the future which remains unfulfilled. And yet all "that these men of God hoped was in connexion with times which are now passed "and can never return, and thus it can never be fulfilled in the future. What "Isaiah of the exile prophesied can never be fulfilled, for all the conditions in "which he expects his people to develop are gone once and forever, and the same "is true of all the prophetic descriptions of the blessed times to come. . . . If all "the particular traits of his prophecies are left out or interpreted in another sense, "one should be honest enough no longer to speak of a fulfilment of the prophecies "in the proper sense of the term."

The same author who thus rejects the idea of a literal fulfilment of Old Testament prophecy adds: "But Jesus has given another and a higher fulfilment of the "Messiah ideal in which a national Israel has no longer a place. In this sense he "had fulfilled the prophecies in the deepest meaning of the word, but at the same "time he has destroyed them in their temporal form and interpretation." (See also Smend, p. 171).

In the same way Ewald emphasises the importance, not of the form, but of the religious substance of the prophecy, and in this sense Franz Delitzsch, too, recognised the limits of prophecy. He says in his *Kommentar*, p. 256:

"The submission of the Ethiopian warrior was the beginning of what Isaiah "had prophesied, but the land of the Nile was subjected under Asarhaddon and "Asurbanipal, his son, the conqueror of Thebes (Nahum, iii, 8-10). Judah's expectation of Egypt became fatal to Judah as Isaiah had prophesied, but the catastrophe of Jerusalem was not the end of Assur; and the expeditions of Sargon "and Sanharib were not as yet the end of Egypt. The triumphs of Jahveh and of "prophecy concerning Assur did not lead to the conversion of Egypt. In all this "the fulfilment of prophecy leaves an element of the human, drawing the distant "that is hoped for into the nearer future. All fulfilment is divine, prophecy, however, is both divine and human."

These theologians and others of equal prominence concede the presence of error in prophecy, and yet endeavor to remove the objection of fallibility from genuine prophets. It is on this ground that Smend would not recognise Nahum and Habakkuk as genuine prophets, because their prophecies remained unfulfilled. Kuenen in the first part of his work *De Profeten en de Profesie* (Chap. 5, 6 and 7, pp. 114-320) devotes several chapters to an investigation of prophetic errors, and shows extraordinary depth and precision in his terms; and Schwartzkopff finds himself in sympathy with him on the basis of an independent investigation of the same field.

In agreement with the healthy atmosphere of Schwartzkopff's thoughts we find the theory that regards prophecy as a second sight rejected. Schwartzkopff says

(p. 164) that there are only an evanescent number of passages both in the Old and the New Testament which seem to allow an interpretation of prophecy as second sight. But in all these exceptions the reliability of the tradition is subject to justifiable doubts. Visions, it is true, appear not only in the beginnings of prophecy, but exceptionally, though more seldom, in its higher development. Nevertheless, it is not the typical form of prophecy, and where visions are introduced, it is not the form of the second sight which makes them prophetic, but the religious purport of the vision.

The main purpose of the present pamphlet, which shows its close connexion with other investigations of the same author, points beyond the prophets of Israel. That purpose is to find a clue to the fundamental problem of Christianity, which consists in a definite and truly philosophical comprehension of the significance of him who is the ideal prophet—Jesus of Nazareth. P. C.

DER KAMPF UM EINEN GEISTIGEN LEBENSINHALT. NEUE GRUNDLEGENG EINER WELTANSCHAUUNG. Von Rudolf Eucken, Professor in Jena. Leipzig: Veit & Co. 1896. Pages, 400. Price, M. 7.50.

The aspiration of *The Monist* is the establishment of a new world-conception and the gathering of all the forces in the philosophical and scientific world that tend in this direction. We have repeatedly called attention to the importance and indispensability of a definite world-conception, insisting that on the character of our world-conception depends the character of our religion, our ethics, and of our main conduct in life. The detail-work of the sciences is not the aim and end of the scientific tendencies of the present age. The specialisation of the sciences must lead back to a unification that bears within it a higher and deeper conception of the purpose of life. Professor Eucken has similar aims, and several passages of his book are closely allied to the spirit of editorials that appeared some time ago in *The Monist*, especially "The Clergy's Duty of Allegiance to Dogma and the Struggle Between World-Conceptions" (Vol. II., pp. 278 et seq.), "The Message of Monism to the World" (Vol. IV., No. 4), and others.

Professor Eucken fails to find in the present offerings of philosophical labor a definite spiritual content of life. He sorely feels the need of the independence, the character, and the omnipotence of spiritual life, and he proposes to purify and deepen the life-process so as to make room for greater experiences. In this sense he has written all his previous works, and the present book is devoted to the same task. He is conscious of preaching to a minority, for the tendencies of the present age are predominantly under the influence either of naturalism or of exclusive specialisation. By naturalism he understands a philosophy which endeavors to resolve all events into physical processes, while to the specialist a consistent world-conception appears an empty Utopia. Thus naturalism would be identical with materialism or mechanicalism, and specialism with agnosticism.

Professor Eucken endeavors to avoid the Scylla of physicalism and the Charyb-

dis of agnosticism, and to get beyond the negations with which they embarrass philosophical aspirations. He proposes to emphasise again the importance of the whole, of that which is a matter of principle, and in this sense he re-establishes the notion of an independent spiritual world.

In the first chapter he shows that man grows beyond and above nature. Nature, that is to say, the physical play of forces, is conquered by man the more he understands it, and thus the supernatural rises into existence. The natural is a life of "pure sensation and affection," but beyond the natural lies the higher empire of the spiritual, and the spiritual is not a mere appendix to the physical. It is a new creation, constituting a movement that comes from the whole and tends towards the whole.

The naturalist would exorcise from nature all psychical magnitudes, and would reduce reality to a soulless mass of motions. He looks upon the world as a complex of small and smallest elements, and regarding all happenings as a purely mechanical interaction of these elements with the exclusion of all internality, he denies all valuations (*Werthschätzungen*) and every purpose as mere phantoms. But the spiritual world is a new creation above the physical world, the wealth of which is unlimited.

We observe three periods in the evolution of man. First, the origin of an independent spirituality, which, however, finds itself embarrassed by its surroundings, by sensuality, and by the grossness of the lower spheres of the physical. This manifests itself as a resistance against the development of the spiritual, which leads secondly, to a transfiguration of its surroundings and to the foundation of a new reality. The third period is characterised by the victory of spirituality over the complications to be overcome.

Man's soul-life is in one respect a mere continuation of the natural process, but in another respect it represents a new beginning. It cannot, however, cut itself loose from its surroundings, but must utilise the data of external nature. It must not attempt to fly from the objective world, but must subdue it and appropriate it. The spiritual world is not a perfected existence. It is not a world beyond, as it was formerly conceived, but it is a going beyond the physical. It is its transfiguration and consecration, yet it is not the mere product of a peculiar condition. It is not the private affair of mankind, but it is the revelation of the inner movement of the All. It opens before our mental vision the depths of the significance of existence. It is an evidence and manifestation of the spiritual nature of being, and leads to an emancipation of the spirit of man. It is a deliverance from the merely human or the puny human, and points towards the solution of the deepest mystery of the world.

A similar solution of the problem has been proposed by Plato in his doctrine of ideas. There we learn that there is a spiritual world which is not rooted in the human alone, but which has an absolute existence. The true, the good, and the beautiful are ideals that have existence in themselves. Spirit is the measure of all

things, and not man. The Sophistic philosophy is a huge error, and this same Sophistic philosophy is very powerful to-day. It endeavors to make man the measure of all things, and this view remains purely Sophistical, even though the single individual may be replaced by society, or a great number of individuals by the average man, or the *Zeitgeist*. All these theories of the day represent the purely human and overlook the importance of the deeper reality from which the human has developed. To be sure, the peculiar form of Platonism has become untenable in the course of further experiences and considerations, but the substance of it remains, and may be called the existence of an independent world of spirit.

The spiritual world forms a contrast to the physical or material world from which it arises. But if the former tries to ignore the latter, it cannot escape punishment. The spiritual life is dependent upon the surroundings of reality and cannot dispense with it. It must struggle with it and conquer it, and through its conquest rise to greater heights. If the surrounding reality be neglected, our experience in the history of philosophy from Plotinus to Hegel proves that the spiritual life grows abstract and dry. It degenerates into soulless formalities unless it be separated by experience. The contrast that obtains must not be denied but must be conquered, not by a compromise but by the appropriation of the material through the spiritual.

The contrast between the spiritual and the real shows itself in all departments of life, and appears in science as the eternally renewed struggle between empiricism and rationalism, which are disparate life-processes that exclude one another and not merely two sides to one and the same reality. The problems offered by the contrast in which the spiritual finds itself with the sensual and material, find their solution in various propositions. Some try to deny the existence of evil. Such is the philosophy of optimism as represented by Leibnitz. He thinks of denying the reality of evil by inducing man to change his position and view his life from the standpoint of the All. Philosophy, he claims, will recognise the harmony of the world as soon as "the eye is placed in the sun." This is the way in which optimism endeavors to free the world from irrationality. Suffering is regarded as a means of education, and even the moral evil or guilt is justified in the scheme of salvation. But we cannot regard evil as a mere accidental phenomenon, and the more the dialectic of optimism is accepted the more artificial appears its position.

Another solution is proposed by those who fly from the world of misery into the realm of the beautiful. Finding it impossible to deny the existence of evil, they seek a harmonious world in the empire of art, but even this is futile for art cannot avoid the abysses of misery, doubt, and sufferings, for wherever it does so, it becomes shallow and trivial.

A third solution is offered by naturalism which regards an independent world of spirit as an illusion. But naturalism, too, is untenable, because it chokes all joy of work, and is a resignation and suppression of all spiritual life. It leads to another solution which is called pessimism.

Pessimism is the resignation of all happiness and leads through a contemplation of the vanity of the world to a contempt for the world, which sometimes appears as a conquest of the world. Pessimism has many advantages over optimism, but its practical consequences are impossible. Whenever pessimism attempts to end in absolute negativism, it will quickly come into contradiction with the real nature of ourselves. By adhering to the principle of negation it surrenders reason, the norm of the spiritual, and the impossibility of such resignation becomes soon enough apparent. A man may resign for himself, but he cannot resign for the totality of mankind and for the whole of the spiritual world. He can resign his subjective happiness. He cannot give up the ideality of his nature. The endeavor to live and to work is not merely physical; it is also metaphysical. We have not only to maintain our individual, and, as it were, "point-like" existence, but also the spiritual process which ensouls us, for we are co-workers in the design of a spiritual world, and we wage a battle for our soul. The whole life of man, from this standpoint, appears as a duty, which is not a creation of our own arbitrary will, but depends upon the inner necessity of our spiritual existence and upon our relations to the invisible order of all things. Misery and suffering are indispensable in the struggle for a spiritual existence, the aim of which does not lead to nothing, but to the construction of a new world. The old ego may be destroyed, but life is resurrected in a new and spiritual self. The lower impulses of life may be rooted out, but the higher aspirations will persist, and their reality becomes the more apparent. The deepest tendency of life is not identical with the yearning for selfish pleasure, and the energetic struggle for life is possible in full contrast to the lower hunger for life, because man in such cases does not stand up for his own individual cause alone. Thus, the reality of evil does not disappear, but loses in its predominance and supremacy in life.

Thus, it is not mere existence which we aspire for, but we must give to existence a content which is the creation of a spiritual world with spiritual significance. Upon this basis a new world-conception must be created which will renew the old ideals that are found in religion, which is not a mere sentiment but endeavors to build up the life of the spirit. Eucken would not confine himself to the forms of our traditional religion, but declares that philosophy should take a view of the whole from a more general standpoint. Yet he feels himself in agreement with the spirit of religion, which is expressed in its ethical aspirations. P. C.

GRUNDZÜGE DER WISSENSCHAFTLICHEN UND TECHNISCHEN ETHIK. VON Dr. Fred Bon. Leipzig: Wilhelm Engelmann. 1896. Pages, 166. Price, 4 Marks.

Dr. Fred Bon's position is perhaps most clearly characterised on pp. 14-15 of his pamphlet where he declares that every individual of a species must on the one hand compete with all other individuals of the same species who have the same wants and need the same means for the satisfaction of their wants, and on the other hand struggle against individuals of other species, who are either utilised for his

benefit or destroyed to provide him with food. The former condition produces a tendency to hostility or isolation, the other a tendency to mutual approach and combination. Thus all life is dominated by "isolation and conclusion," and our author finds "the ethical maxim in conclusion" as against "isolation which is the maxim of egotism." Thus he formulates the definition of ethics, which is the main result of his considerations in the preface (p. 4), as "a superordination of the conclusory interests." The term "conclusory" is original with the author and cannot (from a philological standpoint) be regarded as a happy formation. Since the author intends to elevate ethics, which so far has been a mere science, to an art that should be "the most powerful branch of social politics" (p. 11), he proposes to lay down the outlines also of the "technic ethics," which is "the noble task of the ethics of the future."

The contents of the booklet are subsumed under the headings of "the law of moral evolution" and "the raising of mankind" (*Menschheitsucht*), the latter containing some indifferent discussions of sexual love and various other moral considerations regarding the place of the individual and its individuality in society, moral commandments and an appeal to voluntary complaisance, the influence of moral ideals, etc. On the last page of the book we are told that ethical conflicts will be decided not by arguments or logical deductions but by action and energy. The strongest will conquer.

The author quotes Nietzsche, Wundt, Ihering, Hegel, and Schopenhauer indiscriminately and remains always on the surface. He scarcely touches the real problems of ethics, which is not a "super-ordination of the conclusory interests," not a mere submission to the common will of society (*Gesammtwillen*). Is it not possible, nay, even a frequent occurrence, that one individual is morally right in opposition to all others? Is it true that the strongest will conquer, but the question is who is the strongest? Is the tiger stronger than man, and is there no strength whatever in logical argument or in truth?

SÖREN KIERKEGAARD ALS PHILOSOPH. By *Harald Høffding*, Professor der Philosophie an der Universität Kopenhagen. Mit einem Vorwort von Christoph Schrenpf, Lic. Theol. Stuttgart; Fr. Frommanns Verlag (E. Hauff). 1896. Pages, 170. Price M. 1.50.

GUSTAV THEODOR FECHNER. By *Kurd Lasswitz*. Stuttgart; Fr. Frommanns Verlag (E. Hauff). 1896. Pages, 204. Price, M. 1.75.

HOBBS LEBEN UND LEHRE. By *Ferdinand Tönnies*. Stuttgart; Fr. Frommanns Verlag (E. Hauff). 1896. Pages, 232. Price, M. 2.00.

Imitating a practice which has been extensively developed in America and England, a German publishing house has begun the publication of a series of *Philosophical Classics*, being monographs on the life and work of the leading philosophers of all times. The series, which is edited by Prof. Richard Falckenberg, of Erlangen, begins with the three volumes before us, and will be supplemented by the

following: "Galileo," by Dr. Natorp, of Marburg; "Bayle," by Dr. Eucken, of Jena; "Hume," by Dr. Riehl, of Kiel; "Kant," by Dr. Paulsen, of Berlin; "Rousseau," by Dr. Höfding, of Copenhagen; "Feuerbach," by Dr. Jodl, of Vienna; "Auguste Comte," by Dr. Windelband, of Strassburg; and "Spinoza," "Hegel," "Schleiermacher," "Herbart," "D. F. Strauss," "Herbert Spencer," and "Fr. Nietzsche," by other competent writers. It is intended to publish from three to four volumes yearly. From its cheapness and promised solidity the series will doubtless be a valuable acquisition to the popular literature of the history of philosophy, and although some of the subjects have been much overworked, there are several concerning which it would be difficult to find the same information in other places. This is notably the case with the three initial volumes of the series—"Fechner," "Hobbes," and "Kierkegaard." These three philosophers receive here excellent treatment at the hands of recognised authorities, who have, in addition, suggestive material of their own to offer.

The personality of S. Kierkegaard, although a commanding figure in Danish life and thought, is little known outside the boundaries of his native country, and, if we except the accidental acquaintanceship made by superficial students of Danish literature, even this knowledge is shared only by men of kindred spirit, whose aspirations run in the same channel. Of that great movement which has now for a quarter of a century been slowly gathering irresistible force, and whose aim is to reach a juster and more practical conception of the laws regulating human conduct, and particularly to harmonise the traditions touching this matter with the reasoned thought of the present, Kierkegaard was one of the greatest forerunners and most powerful exponents. The importance and power of Kierkegaard, like that of Socrates (he was the Socrates of Copenhagen), lies mainly in his personality. The main-spring of his entire thought and action was his colossal hypochondria, his distinctest patrimony, stamping every lineament of his life. His subjectivism in philosophy, his individualism in ethics and in religion are its logical issues, and in it, too, we find the full psychological explanation of the scheme of philosophy which he elaborated. His works are numerous and bear mainly upon the burning ethical problems of existence. They have all an intensely practical bearing, and, in style, the incisive forcefulness which comes from straightforward and honest effort. His prose, direct, homely, and vivid, joined to great persuasive power, wealth of metaphor, satire, and invective, stands unrivalled in Danish literature. If he is not more widely known it is mainly because of his singular excellence in this regard. For although some of his work has been translated into German, like Carlyle and Emerson, he must be read in his native language to be adequately appreciated—and students of Danish are few.

As to his philosophy, its fundamental features are determined by the predominantly religious cast and effort of his thought, which studied psychology and ethics merely as the propædæutics of a mode of life. His interests were never purely theoretical or scientific, but ethical, educational, and salvational. It is the main and

only proper aim of thought, he contends, to discover the methods by which man is best fitted to lead a moral life in this world. He attempted this by first seeking a method of life for himself and afterwards establishing its validity for others. He regarded it as his duty "to raise difficulties" in the world of thought, which has, by the way, always been the philosophical method, and to exhibit the breaches between the logical consequences of ideas and the practical compromises which the world, by the exigencies of historical evolution, has been forced to make. He was bent upon unmasking the illusions and deceptions which man had thus imposed upon himself. His criterion of truth was absolute *subjective* clearness on all points—a view which had its roots in his intense and supersaturated egoism—and, this clearness reached, the courageous and honest adoption of the alternative presented as the upshot of such investigations. *Either-Or*, was his motto, the title of one of his most important works, and the name by which his unique figure was known even to the gamins in the streets of Copenhagen.

This same feature leads to an important characteristic of his general scheme of thought, which he has termed the *leap* or *saltus*—the cold plunge of resolution, the mental acrobatic feat which precedes all momentous decisions and which, in his view, marked even the growing action of nature. He knew nothing of evolution, and did not even permit its most natural and primitive intimations to affect his system. There was no continuity for him either in the natural or in the mental world—all went by breaches, ruptures, solutions of unity. He had absolutely no sense for the organic, nor even for the determinative aspects, of existence. Things *leapt* into existence, they became not. By such magic somersaults the world grew; by such its institutions were born, and by them man, too, was destined to carve out his salvation. In the same indeterministic fashion Christianity was catapulted into existence, and, having existed, illogically enough was foreordained to continue ever after as it originally was, unmodified by history or circumstances, and admitting of no compromise with the world or worldliness.

Kierkegaard's battle for the rehabilitation of primitive Christianity in its purest, rigidest, and most unadulterated form, was the crowning achievement of his life. It brought him into conflict with the ruling church, which he repudiated as a dishonest and hypocritical compromise with the worldly spirit of the times, and subjected him to not a little annoyance in the way of petty persecutions, which were rendered more easy by sundry grotesque features of his thought and personality. He was a standing figure in the comic journals of Copenhagen,—a distinction which he resented bitterly,—and having been once maliciously accused of a discrepancy in the longitude of his trousers' legs, gravely refuted the charge in his diary. But these were mere wrinkles on the anatomy of his greatness. His idealism, moral earnestness, his great literary power and puissant manliness, render him a gigantic figure in Denmark; and certainly one of uncommon stature in the race. For as a religious thinker, even by the world's standard, he will stand high, although as a philosopher his position is not so lofty; and it is not the least of Prof.

Harald Höffding's merits in this appreciation of his life to have pointed out frankly the obvious inconsistencies of his doctrines.

Prof. Kurd Lasswitz, in his sketch of the life and work of Gustav Theodore Fechner, has attempted a critical *résumé* of the achievements of modern science in their bearing upon the ontological and cosmological problems of the world. He treats of motion and consciousness by the light of the new epistemological researches, and resolves the antinomies which they offer in an ingenious and masterly manner. His discussion of the significance of the threshold of perception as the criterion and distinctive characteristic separating the psychical from the physical is a skilful and creditable piece of analysis, but as it has been presented at considerable length in a recent number of *The Monist*, by the author himself, there is no need of our reverting to it here. The 111 pages of the work which are devoted to the delineation of Fechner's life show us the great psychologist as a student of medicine and disciple of the *Naturphilosophie*, a physicist who makes important researches in electricity and optics, and as a literary hack who is forced to earn his means of existing and of prosecuting his scientific researches by toilsome drudgery. They also tell us of his humorous writings, his ventures generally into literature, and of his four years of illness in middle life, when he was obliged to cease absolutely from all intellectual labor and from the least social intercourse with his family and the world. This period seems to have determined his bent for philosophy, which on his recovery he zealously pursued, giving to the world the works which contained the germs of all his views on the empsychosis of the universe and of so-called inorganic matter, and also of his doctrine of the parallelism of feeling and motion. His great work on *Psychophysics* appeared in 1860, in his fifty-ninth year, and the rest of his long life was devoted to the development and defence of the principles it established. Here falls his important work in analytic and experimental aesthetics, and finally we have the book in which he casts up his views of the world and of human destiny. His was a deeply religious nature, with a slight strain of mysticism, accounted for by his early philosophical environment, gentle, unassuming, and noble. He died in 1887 at the age of eighty-six, after having seen the science of which he was the principal founder attain undreamt-of breadth of development.

The life of Thomas Hobbes, of Malmesbury, by Dr. Tönnies, remains to be noticed. It has been a work of love for its author, who has achieved an honorable reputation for his researches in the life and work of this great English thinker, and who has done as much as any contemporary writer to reinstate Hobbes in his true importance and fame. We have first a sketch of the life of the philosopher and of the genesis of his works, and then a discussion of his doctrines, his metaphysics, his logic, his mechanics, physics, anthropology and politics. In most of these departments Hobbes wrought permanent acquisitions to science which have been system-

atically obscured by posterity, although it can hardly be said that eminent vouchers of his philosophical importance have ever been wanting. Nevertheless, it will be well if interest in his work can be heightened and if we can trace to their true source there the beginnings of critical ideas which have dominated the two succeeding centuries. And to this effect Dr. Tönnies's little book will contribute much. McC.

HISTORY OF PRUSSIA UNDER FREDERIC THE GREAT. 1756-1757. By Herbert Tuttle, Late Professor in Cornell University. With a Biographical Sketch of the Author. By Herbert B. Adams. Boston and New York: Houghton, Mifflin, and Co. 1896. Pages, 159.

Prof. Herbert Tuttle, the greatest authority in Prussian history in the United States, and Professor at Cornell University, died in 1894, leaving his great work the *History of Prussia Under Frederic the Great* unfinished. Two volumes had appeared (1740-1745 and 1745-1756) and another was ready for publication (1756-1757), while the remainder was still in the shape of notes and references. Professor Tuttle's colleague and friend, Herbert B. Adams, was entrusted with the honor of editing the third volume, which now lies before us prepared with a biographical sketch of the lamented author.

Professor Tuttle was a born historian. He tells history by confining himself to the essential and introducing the incidental only where it is needed for a completion of the picture. He shows a keen appreciation of characters and is always just and fair in his judgment. He is more concise and at the same time less prejudiced than Carlyle, and his merits have been freely recognised by German scholars. Erdmannsdörffer, the historian, and Gneist, the jurist, were full of praise when speaking of Professor Tuttle, who had become to the American nation a noble interpreter of German thought, and was equal in worth to Bayard Taylor, the famous translator of Goethe's *Faust*. The latter worked on different lines and in a different field, which was the literary Germany; yet the domain which Herbert Tuttle had selected as his life-work was not of less but rather of more importance. Tuttle stood in the midst of practical life. As the Berlin correspondent for the *London Daily News* and the *New York Tribune* he enjoyed great advantages, and his pleasant home in the Hohenzollernstrasse was a cosmopolitan centre of attraction for many prominent men of politics and science. Among the distinguished guests whom he received were Moltke, Helmholtz, the young Bismark, and others of similar prominence. His most noted American friends are President Angell of Ann Arbor and Andrew D. White of Ithaca. The former was his first teacher of history, and his spirit had deeply influenced and formed the methods of Herbert Tuttle; but it was the latter who encouraged him to follow the natural bent of his inclinations and suggested to him the project of aspiring for a university career.

Tuttle met, in Berlin, Miss Mary McArthur Thompson, a student of art and an occasional correspondent on art to the *International Gazette*. She was the daughter of Judge Thompson, of Hillsboro, Highland County, Ohio, and he mar-

ried her at her father's home July 6, 1875. She remained his faithful companion and coworker until his untimely death.

In speaking of Tuttle, the best expounder of the Prussian spirit, of Prussian heroism, and Prussian sense of duty, we ought to explain the greatness of this remarkable people and the dynasty that at last succeeded in resuscitating the old German empire and making the German name respected not only in the realm of literature and science but also in the world of politics. But we could not do it better than it has been done by Professor Tuttle himself, and since the subject is not only of interest but also of importance, we shall not begrudge him the space for it in this review of his posthumous work but quote it in full. It is a lesson that our American youths should well remember. It was at a banquet given by Americans on a Fourth of July at Berlin that Mr. Tuttle was called upon to respond to a toast "Americans in Europe," where among other striking remarks he spoke the following noteworthy words:

"We are content to learn without teaching, to observe without reforming; and in this sense I shall ask leave to address for a moment that class of students, old and young, who earnestly seek to profit by the study of the social and political institutions of Europe. Holding myself the most needy of them all, what I have to say will be only in the form of suggestion. The first valuable lesson which the thoughtful American learns here in Berlin, for instance, is, in my opinion, to take off his hat when the Emperor drives along the street. I say this with all earnestness, for beneath the practice lies one of the profoundest moral truths in the economy of social life. To say that it is a mere act of servility to a reigning prince, or a recognition of the monarchical principle, is as unjust as it would be to accuse me of reading this company a paltry lesson in etiquette. No, in this act of respect to the head of the State we simply recognise the majesty of the State itself. We do homage to that long series of brave monarchs, to that combination of valor, sagacity, and patience which expanded the little mark of Brandenburg, almost hiding in the swamps from the savage Wends, into the fair portions of the Prussian State and the mighty system of the German Empire. We are really in the presence of the immortal heroes of Fehrbellin, of Rosbach, of Sadowa, of Gravelotte, and of a hundred other victorious battlefields. We are uncovered before the Protestant Reformation, to which Prussia and Germany owe so much. And, sir, when we cross the ocean and confront a different form of government, this eternal truth still asserts itself, or ought to assert itself, through all the violence and passion of party conflicts. It is not simply the spirit of this day, it is not the publicity of this occasion, but obedience to an earnest conviction of political duty, which leads me not only to echo your own eulogies upon the first magistrate of the Republic, but to endow him in fancy with all the virtues of Washington, and Jefferson, and Adams, and Lincoln. By this means we exalt our conception of the office, we exalt the office itself. But the base partisan spirit of detraction, the impudent and obtrusive familiarity, the utter want

"of courtesy to the man for the sake of the high office, from which not even the American President is spared, is more than bad taste, more than a display of ill-breeding,—it is demoralising and dangerous. And the man who, in the press, or on the platform, or anywhere, fails in that delicate and noble consideration, seems to me to want one of the first qualities of the perfect citizen. He is false to his own better nature, and disrespectful to the long series of names which have rendered illustrious the annals of that great office. Presidents come and go,—some of them come too soon and go too late,—but they are all links in that glorious succession which for a century makes up the historical harmony of the State. Therefore I plead, Mr. Chairman, for all those trifling courtesies, for all those delicate social observances, which lend dignity to any political system, and exalt the conditions of all public life.

"If time permitted, I might call the attention of American students to other objects worthy their careful notice in Europe. I might mention that recognition of the omnipotence of law which, even among so orderly a people as ours, is not invariably felt in a broad, general, abstract sense. I might set over against the energy and restlessness of American life the element of æsthetic repose, which is an important condition of all great achievements in science, or art, or literature. But these can only be suggested, and others must be wholly omitted.

"In conclusion, Mr. Chairman, you will permit me, almost a veteran as it were of our little colony here, to pay a slight tribute to the young men whom during a term of four years I have seen come and go. I have known them and watched them carefully. I have observed their lofty scholastic zeal; I have learned to know their high conscientious purpose; and as their countryman I can say from the bottom of my heart that I am proud of them. They are not indifferent students; they are not superficial observers; and I am convinced that in their chosen professions, whether medicine, law, theology, or political science, they will carry back the best results of foreign study, and a broader equipment for the duties of the American citizen."

This is the spirit in which our young men should go abroad, and if they apply Professor Tuttle's lesson, they will on their return to America be a blessing to their own country and serve as channels through which the greatness of the Old World may flow over into the national life of the New World without adding here to the cramping conditions which there form a hindrance to a freer and higher development.

P. C.

ERKENNTNISSTHEORETISCHE GRUNDZÜGE DER NATURWISSENSCHAFTEN UND IHRE BEZIEHUNGEN ZUM GEISTESLEBEN DER GEGENWART. Allgemein Wissenschaftliche Vorträge. By Dr. P. Volkmann, Professor an der Universität Königsberg i. Pr. Leipzig: B. G. Teubner. 1896. Pages, 181. Price, 6 Marks.

Professor Volkmann is a physicist by profession whom the waxing interest now centring about the philosophical problems of science, has moved to a daring plunge

into the "rude imperious surge" of epistemology. There is much in his book to commend, particularly its humanistic and popular spirit, as also the exalted educational objects which it sets. On this, and related excellences, there can be but one opinion. The interest of the philosophical student, however, lies in a different direction,—narrower, and in a measure more ungenerous, but technically of paramount importance,—an interest that concerns the independent and original contribution which the book ostensibly makes to science; and on this point there is ground for difference.

Perhaps owing to the popular form in which his thoughts are cast, Professor Volkmann's expositions have not the rigor and impressiveness which intrinsically belong to them; but antecedently we should be inclined to think to the contrary. The simple forms of the mathematical and physical sciences best lend themselves to the considerations with which epistemology is concerned, and it is precisely the simplest of these simple forms in connexion with which the elements of this discipline ought to be most satisfactorily developed. The success which the scientific predecessors of Professor Volkmann have achieved in this department is almost exclusively due to the fact that they have set out from just these branches of inquiry.

The volume is made up partly of a number of popular articles which originally appeared in *Himmel und Erde*, and partly of a series of popular lectures delivered in Königsberg. They discuss broadly the relations of the sciences and philosophy, the historical attitudes of mankind to knowledge, the characteristic features and tendencies of the main branches of scientific and humanistic research, the distinctive methods of scientific investigation, the wonderful acquisitions which have been its upshot, and lastly but not least, the bearings of all this momentous work upon methods of research in sociology and upon practical educational and intellectual problems. All this, as a matter of reproductive exposition, has been done clearly and intelligibly, in a manner commensurate with the author's accredited competency, and not infrequently with the added ornament of really elucidating the points at issue. What criticisms we have to make, apply solely to the principles which the author has advanced with polite but evident pretensions to power and novelty as epistemological aids, and which he regards as his unique and valuable contribution to the subject. These are the principles of *Isolation* and *Superposition*, which we may now briefly examine.

Nature bears, to all appearances, a predominantly composite character, which in cognition must be resolved into its constituent or determinative elements. These elements are then again combined to reobtain the phenomena of nature according to the varied exigencies of life and thought. Ordinarily these processes are styled abstraction and combination, analysis and synthesis, separation and composition, but Professor Volkmann prefers to call them *isolation* and *superposition*—designations which in his judgment carry meanings not conveyed by the traditional terms.

Superposition has a well-defined signification in elementary geometry, as a method of demonstrating congruency, and in physics as the method of adding vectors. It is only in this last meaning that it has any analogy with the proposed usage of Professor Volkmann, saving, perhaps, its etymology. It is possible that being "foreign words" in German, both these terms have a more technical clang in that language, and offer a seemingly richer field of prospective association than they do in English, where their use is common. This is an important consideration in the choice of new designations, as is evidenced by the formation of scientific terminology, and by the sorry figure which sometimes quite excellent appellations of new principles in one language cut when translated into another. Or again, they may be viewed as catch-words. Catch-words, even where they do not embody new ideas, may greatly elucidate the mechanism of research, if they are at all happy or even passably rich in associations, since this last attribute, as involving the principle of comparison, is really at the root of explanation. But either of these implied criteria a new term must satisfy. It must either have a rich connotation or admit of such being supplied. And neither of these demands do Professor Volkmann's innovations seem to satisfy, at least in a sufficient manner to justify the ousting of the old terms.

Do they offer then anything new on the side of their contents? We think not. Professor Volkmann's isolation is simply abstraction, and we gain nothing by saying we *isolate* the qualities and effects of nature rather than *abstract* them, any more than we should by saying that we *separate* or *extricate* them. The legitimate function of these terms is that of synonyms or helps in defining a fundamental operation. Similarly, we gain nothing by saying the *superposition* of forces rather than the *composition* of forces, nor by speaking of the superposition of effects generally rather than of their apparent *complexity* or *mingled action*, which in nature itself and objectively is *one* and only requires analysis because of the needs of *our* comprehension. Thus, a given force may be always viewed as the resultant of an indefinite number of other forces, indefinitely directed. But in the system of nature itself such a superposition of forces can scarcely be said to have *actual* significance, be its intellectual and practical justification what it may.

Professor Volkmann lays no stress on superposition as a principle of nature, however, but emphasises it solely as a principle of epistemology, having its prototype in the composition of forces. Yet what it elucidates here more than the present conception of the phenomena elucidates is also difficult to see. That the forces act *independently* of one another, or as if they produced their effects successively and separately, must be discovered and stated in both cases; and when that has been done there is nothing left. It is then just as clear to say that they are *compounded* as that they are *superposed*. The same is true of the other examples adduced (p. 76 et seq.); their character is apparent from their mere statement. And as to the extended application of the principles, to the concepts of abstract and concrete, theory and practice, school and life, being and thinking, etc., these too

must be pronounced unfortunate, since they can only be regarded as metaphorical extensions of the same idea, obvious enough, but withal considerably strained.

For example, since *abstract* and *concrete* are synonymous respectively with *centre of isolation* and *superpositum*, and forasmuch as a natural law is an *abstractum*, centre of isolation, or *isolatum*, therefore we can never logically expect that there should exist a law comprehending and explaining the *entirety* of nature, for the reason that nature is a concretum or, *novo termino*, a superpositum—where-with a dangerous but popular metaphysical error is refuted.

The conclusion is undeniable. Yet it might be just as well to risk the chances of being misunderstood by merely saying that a thing which is a knowledge of a *part* cannot logically be a knowledge of a *whole* consisting of dissimilar parts. As an instance of the power of the new view the example is not felicitous.

There is no gainsaying but Professor Volkmann by long dwelling upon his ideas of isolation and superposition—through the associations naturally formed—has found them of inestimable value in his personal efforts at orientation; but we opine that their natural sphere of usefulness ceases at this point. In denying to them absolute validity, we must bear in mind his prefatory disavowal of such a qualification for all epistemological norms, and his position that we are in search here of advantageous points of view only. But have they a wide validity even as such? Are they not an encumberment of our epistemological machinery, which is pretty heavy as it is? A supererogation? In our judgment they merely elaborate the fact that the processes of analysis and synthesis have always been, and are still, widely used in thinking.

We have no occasion to remark upon Professor Volkmann's strictures of Monism, as he identifies its doctrine absolutely with the principles advanced by Haeckel; their falling wide of the mark here is not our concern. Nor are our own animadversions to be conceived as derogatory to the general merits of Professor Volkmann's book,—merits which we believe are solid and which we have sufficiently emphasised above.

T. J. McC.
GRUNDRISSE EINER GESCHICHTE DER NATURWISSENSCHAFTEN, ZUGLEICH EINE EINFÜHRUNG IN DAS STUDIUM DER NATURWISSENSCHAFTLICHEN LITTERATUR.
Von Dr. Friedrich Dannemann. I. Band: erläuterte Abschnitte aus den Werken hervorragender Naturforscher. Mit 44 Abbildungen in Wiedergabe nach den Originalwerken. Leipsic: Wilhelm Engelmann. 1896. Pages, 375. Price, M. 6.

The closing years of the nineteenth century have been pre-eminently years of reflexion and retrospect. In the fever and haste of acquisition which followed upon the astounding revelations of the two first and classical centuries of scientific inquiry, ours had little time or composure for reverting to the works of the masters either for criticism or for stimulus. For the first the need did not as yet exist, and as for the second, perhaps, the quelling sources had not yet run dry. But with the

increase of the body of knowledge and the infinitely ramifying extension of its details, the necessity of keeping handbooks and treatises up to date, all of which led to reproductions of reproductions in untold measure, humanity got farther and farther away from its original inspiration in certain departments—much to the detriment of critical inquiry, but more so to that of instruction. Thus, even in the first decade of this century we find an eminent mathematician complaining that Newton, the Bernoullis, and even Euler were not read, and ascribing certain grave aberrations in his science to their neglect. Thomson & Tait's effort to re-establish the hegemony of Newton's dynamical ideas is known to all.

The reaction first and naturally set in in connexion with the historical sciences, philosophy, Biblical research, literature, etc., and although it was long before its quickening effect was felt in science, the vigor with which it is now taking possession of this field, has made amends for its tardiness. Its visible expression is the vast number of recent books by scientists on the theory of knowledge, histories of special sciences and groups of sciences, the humanistic and organic character which instruction is taking on, and lastly but most important of all, and having an intimate connexion with the foregoing, the publication of series of Scientific Classics, from which students may draw their inspiration undefiled. The best known of these are the series of Dr. Ostwald, published by W. Engelmann of Leipsic, and the fac-simile reprints of epoch-making works issued by Mayer & Müller of Berlin. We may have occasion to mention these in detail later.

The most recent testimony of the power, beauty, and utility of the new idea, as a means of quickening instruction, is the book by Dr. Dannemann now under notice. Dr. Dannemann's work is designed to be an elementary history of the natural sciences, wherein the accounts of the great monumental discoveries of science shall be given in the original words of their first promulgators. The powerful stimulus which such a book offers cannot be overrated. It is intended primarily for students in high schools, polytechnical schools, colleges, etc., but is so delightful and unique in character, and supplies so gaping a want in the literature of instruction and of autodidactic reading that there is no lover of scientific culture, nor even of genuine classical culture, but could wish its pages might be ardently dwelt upon and absorbed by every man and woman. It is no exaggeration to place upon it a religious valuation. The day is not many centuries distant when such a book, compiled perhaps on slightly different lines, will take its place in our home-libraries by the side of *The Imitation* or the *Mahāparinibbāna Sutta*.

The idea of using for purposes of instruction classical researches of the great masters of science is not a new one, having been proposed a long time ago by Professor Mach of Vienna as being psychologically and æsthetically far better qualified for imparting the genius of science than the systematic but dry study of skeleton compendiums. Professor Mach's plan aimed at positive, typical instruction in science for students not intending to pursue a professional scientific career, and would have embraced only a few but relatively complete researches. Dr. Dannemann's

idea is slightly different. His selections comprehend nearly *all* departments of inquiry and constitute, so to speak, an anthology of science. The book may be compared to the *Quellenkunde* of historical students, although it is both more and less than a book of sources in giving specimen passages and in not giving full bibliographies.¹ We can convey no more vivid idea of the beautiful and useful character of the work, nor bestow upon it higher praise than by enumerating a list of the passages reproduced, each of which is preceded by a brief biography and characterisation of its author.

There are 62 in all. The first four are from the *Zoölogy* of Aristotle, from the mechanical and mathematical works of Archimedes, and from Pliny's *résumé* of the scientific knowledge of antiquity. The fifth is from Copernicus, enunciating the heliocentric system. The sixth, seventh, and eighth are from Galileo: (1) on the Copernican doctrine, (2) on falling bodies, and (3) on the discovery of the moons of Jupiter and the rings of Saturn. The ninth is Gilbert on the magnet, the tenth Kepler on comets. The eleventh is on Bacon as the promulgator of the inductive method of inquiry.

Next come Pascal and Périer on barometer-heights, Guericke on the air-pump, Newton on sunlight and the law of gravitation, Huyghens on the undulatory character of light, Mariotte on the atmosphere, Swammerdam on bees, Hales on the physiology of plants, Celsius on the thermometer, Kant and Laplace on the origin of the universe, Chladni on meteors, Euler on the undulatory theory, Aepinus on electricity, and Franklin on the lightning-rod. Scheele's discovery of nitrogen, Lavoisier and Laplace on combustion and on heat, Galvani on electricity, and selections from Goethe's *Metamorphosis of Plants*, follow. Then we have Sprengel on the fertilisation of flowers, Saussure's chemical researches on vegetation, Blumenbach on anthropology, Cuvier's enunciation of his "natural system," Dalton's atomic hypothesis, Berzelius on the fixed proportions of atoms, Gay-Lussac on the law of volumes, and on iodine, Davy on potassium and sodium, Cuvier on catastrophes, Lyell on geology, Wöhler on aluminium, and Oersted on the magnetic needle as affected by the electric current. Afterwards come extracts from Faraday's *Experimental Researches*, Talbot's invention of photography, Johannes Müller on the sense of sight, Schwann on the cells of organisms, and Schleiden's refutation of the assumption of vital force. The last are Liebig on vegetable nutrition, Unger on the transition from the vegetable to the animal world, Darwin on the formation of coral islands, Bessel's first measurement of the distance of a fixed star, Carnot on the theory of the steam engine, Mayer on the conservation of energy, Schönbein on ozone, Schrötter on red phosphorus, Pasteur on micro-organisms, Kirchhoff and Bunsen on spectrum analysis, and, lastly, Alexander von Humboldt's *résumé* of the state of natural knowledge in the year 1845.

¹A second volume is promised, portraying the connexions of the sciences whose results are here exhibited.

From this list no one can withhold his admiration. Additional selections might be suggested, but none could well be omitted.

In commending the book of Dr. Dannemann, we could do the student no greater service than to recommend for his collateral perusal Carus Sterne's *Allgemeine Weltanschauung in ihrer historischen Entwicklung* (Stuttgart: Otto Weisert), which depicts in rapid and brilliant strokes the connected development of that body of knowledge of which Dr. Dannemann offers the living documents.

T. J. McCORMACK

DIE GRASSMANN'SCHE AUSDEHNUNGSLEHRE. Ein Beitrag zur Geschichte der Mathematik in den letzten fünfzig Jahren. Von Dr. V. Schlegel, Professor an der Gewerbeschule in Hagen. Leipzig: B. G. Teubner. 1896. Pages, 44.

Grassmann's ideas have been widely studied in America, and much non-professional curiosity has been aroused with regard to them. The present contribution by Dr. V. Schlegel to the history of the great work embodying them will therefore be a welcome help to all who desire a closer knowledge of the externalities of the subject,—to mathematicians as a bibliographical survey, and to laymen as characterising the significance of the movement. Dr. Schlegel was a teacher at Stettin and a younger colleague of Grassmann during the latter years of the great mathematician's life, and has since devoted most of the time which he could spare from his professional labors to the enthusiastic research of Grassmann's achievements. The present brochure, which has been wisely printed in separate form, so as to be accessible to students, is a brief and accurate history of the *Ausdehnungslehre* and of its broadly ramified relationships with other branches of mathematics. The useful bibliography which is appended contains more than one hundred and eighty titles, while that indispensable adjunct, an index of names, is not missing.

INTRODUCTION TO SOCIOLOGY. By Arthur Fairbanks. New York: Imported by Charles Scribner's Sons. 1896. Pages, xv, 274. Price, \$2.00.

THE PRINCIPLES OF SOCIOLOGY. An Analysis of the Phenomena of Association and of Social Organisation. By Franklin Henry Giddings, M. A. Professor of Sociology in Columbia University in the City of New York. New York: Macmillan and Co. 1896. Pages, xvi, 476. Price, \$3.00.

There are so many minds now engaged in studying the laws which govern the problems presented by society, it is not surprising that these two works should appear about the same time, although that of Professor Giddings had a short precedence. Necessarily they go over much the same ground, and for this reason, as well as owing to certain contrasts they present, they may with propriety be reviewed together. It is true that Professor Fairbanks does not claim to have given even a systematic outline of the principles of Sociology. He admits, moreover, his obligations to Professor Giddings's earlier writings, although the *Principles of Sociology* reached him only after his own work was in type. But it is for others to judge of

the merits of his contribution to the science of which he treats, and they cannot be pointed out better than by a comparison of his views with those enounced in Professor Giddings's more ambitious work. This claims to have placed sociology on a true basis, by referring association and social organisation to the "consciousness of kind" which marks off the animate from the inanimate, and by treating it consequently as a psychological instead of a biological science.

In a few paragraphs, on nearly the last page of his book, Professor Giddings puts and answers the question whether society is an organism. He regards this as the final question for the student, and thus unconsciously provides a test by which to judge of the merits of his book, if not of its theory. His conclusion is that a society is "as much higher and more complex than an organism as an organism is higher and more complex than inorganic matter." It is an *organisation* the function of which is "the evolution of personality through ever higher stages until it attains to the ideal that we name humanity." This function must be always active, and thus we are told, that "at every step the sociological task is the double one,—to know how social relations are evolved, and how they react on the development of personality." But how can the task be properly performed unless we have a general idea of the nature of the existence under consideration? In reality this is assumed, and as the whole question is as to the character of the laws which govern its activity and the results of their operation, it is advisable, if not essential, to begin the study of society by obtaining as clear an idea as possible of its general nature.

The importance of this point is recognised by Professor Fairbanks, who begins the first chapter of his book by the statement, that "the first work of the student of sociology is to form a general conception of the nature of a society or social group, that object which he proposes to study." The question here implied is answered by allowing to society the organic character, without admitting it to be actually an organism. The organic character of a society is denoted by its unity, combined with remarkable complexity of structure, which unity and the development of the society are determined from within. The real unity is dynamic, and therefore consists, "not in the structure, but in the one process in which all the parts depend intimately on each other." Professor Giddings, on the other hand, speaks of society as an *organisation*, by which he means "a complex of psychical relations," having a physical basis. Thus, it evidently possesses an organic character, and like an organism, "it may exhibit every phase of evolution—of differentiation with increasing cohesion or unity." Though Professor Giddings concludes that a society is much higher and more complex than an organism, yet he affirms that the analogy sought to be established by Mr. Spencer between the social constitution and the constitution of a "biotic organism" is real, while at the same time the former possesses features that are distinctive.

Thus, although the individual is the simplest unit of society, he is naturally a social being. It is true that, as Professor Fairbanks suggests, man was not orig-

inally a gregarious animal "of choice." But he had no volition in the matter. His nature required him to be social. The feeling in which the "attractive forces" of society are based is an essential feature of human character. It exhibited its action in the first union of man and woman, and it was intensified when the enlarged unit of society, the family, was completed by the birth of the first child. In the fundamental position assigned by Professor Fairbanks to the attractive forces in the formation of society we have one of the most important features of his work. Professor Giddings refers to the development of sympathies, but these are due, according to his theory, to the educational influence of association, which results in "a feeling of pleasure in the mere presence of a fellow creature." It is evident that this feeling is different from *the consciousness of kind* which he postulates as "the original and elementary subjective fact in society," and which he explains as "a state of consciousness in which any being, whether low or high in the scale of life, recognises another conscious being as of like kind with itself." Consciousness of kind he believes to be "co-extensive with potential society and with nothing else," and therefore fulfils the sociological requirement. But mere consciousness of kind may exist under conditions which preclude the formation of social groups, and it would be useless for this purpose in the absence of the feeling of pleasure in the mere presence of a fellow creature, which Professor Giddings refers to as one of the creations of association, but which, rather than simple consciousness of kind, we should consider to be the fundamental fact.

Conflict occupies an important position in Professor Giddings's theory, and he regards it as unnecessary to prove that "social intercourse is a mode of conflict." And yet, although a clash of atoms or of thoughts may be necessary to progress, without some other process there would be no positive results. Attraction as well as repulsion is necessary to a perfect vibration, and if social intercourse is nothing but a mode of conflict society proper would never have existed. Society is an organic unity, and that which forms its actual basis, the family, is an expression, not of conflict, but of the attractive forces which Professor Fairbanks properly regards as part of the psychical character of individuals, and which constitute the real social bonds. The family is thus naturally regarded as a social unit, and to Professor Giddings it is, indeed, *the* social unit, although, according to him, the family is not properly a society unless it includes adopted members. But we would suggest, that if the actual primordial family consisted, as there are reasons for believing, of a woman and her children, that is, the simplest group of blood-relations, then the father of the children may be considered as an adopted member of the family, which, as thus augmented, becomes a true social group.

The actual value of the association of man and woman in primitive communities is not developed in either of the works under review. It is recognised, although not fully, by Professor Fairbanks when treating of the beginning of separate economic functions. He gives the first place, as a source of separation, to the difference between the strong and the skilled, and the second place to the difference be-

tween the sexes. In relation to the latter, he says, "the general line of division was between the outer world, and the inner world of the family which began to be formed. To the man fell the duties of protection from attacks of man and beast, and the procuring of game for food. The work of the home, such as the preparation of food, the manufacture of garments, care for the children, the provision of whatever man may need or desire, this was commonly the woman's lot. This source of differentiation was no less important than the preceding, in providing the basis for a higher type of social organisation." It was more so, as society is the co-ordinated expression of the internal and external activities represented by the two sexes. Woman stands for the attractive forces which form the cement of society in all stages of its development, and man for the repelling forces which govern the external relations of primitive societies, and which are referred to by the term "conflict." The former are represented by the gens, which originally consisted of the descendants of a common female ancestor, and the latter by the tribe. Professor Fairbanks says little as to the origin of these social groups, but the subject is dealt with fully by Professor Giddings, who follows in the lines of his predecessors. A little more originality would have been advisable, as the views of Dr. J. F. M'Lennan and other early writers are open to considerable criticism, as the present writer has shown in his work on *The Development of Marriage and Kinship*. The hordes about which Professor Giddings has much to say, are probably only portions of disintegrated tribes. The existing cases he refers to are of no value for the purposes of his argument, especially as he has fallen into an error in classing among them the aboriginal Australian social groups. As shown by Mr. A. W. Howitt, the native Australians have a perfect tribal organisation, and what Professor Giddings treats as a horde is really a tribe consisting of several totemic groups. Otherwise his explanation of the historical evolution of society is very good. It is considered under the heads of Zoögenic Association, Anthropogenic Association, Ethnogenic Association, and Demogenic Association. Professor Fairbanks deals with the subject of association much less fully. His mode of treatment, however, requires him to give special prominence to particular topics, and hence he has separate chapters on "The Industrial Organisation of Society" and "The State as an Organ of Social Activity." In the latter he refers to the tendencies of the modern state to interfere with economic activities and to become the employer of labor in numerous forms of industry, without passing any judgment on this debatable subject.

We are pleased to see that in both the works under review the "Social Mind," which is the General Mind of G. H. Lewes under another name, is considered deserving of treatment in a separate chapter. Both writers regard it as existing only in individual minds, although it is more than any individual mind. Professor Fairbanks is particularly happy in his dealing with the relations of the individual to society. He speaks of the person as "the concrete expression of the group life," though progress proceeds from individuals, whose personality is the "true and ad-

equate expression" of the psychical life of the past and of the present; which agrees with Professor Giddings's conclusion that the function of social organisation is the evolution of personality. The work of Professor Fairbanks has two chapters on the influence of natural selection in human society, where it insures the survival of the fittest individuals, the fittest groups, and the fittest institutions. Struggle is raised to the psychical plane, and its aim is supremacy instead of destruction. To Professor Giddings also society is a psychical phenomenon, but physical energy is the source of all its activity and equilibration of energy the cause of all its changes, social progress being thus a phase of physical evolution under the influence of the psychical factor. The relation of psychology to sociology is a practical question of great moment, and Professor Giddings's view of it is seen in the statement, that "psychology is the science of the association of ideas. Sociology is the science of the association of minds." But as psychology is concerned with "the genesis and with the combinations of the elements of mind," it is rather the science of the association of states of consciousness than of ideas. Professor Fairchild's opinion is that the individual mind does not exist until it is developed in society. So that psychology has to deal with man in society, and sociology with "the psychical-life which arises when men enter into organic union." Thus, "the subject of the two sciences is the same, and the difference between them is simply a difference of standpoint." We would suggest that the principles are the same in each, but that one is concerned with the individual mind and the other with the general or social mind.

There are various other matters dealt with by these two works which might be referred to, but we will content ourselves with saying generally that, notwithstanding the criticisms we have felt bound to make, they are both deserving of much commendation. In a sense they may be regarded as complementary to one another each supplying the other's deficiencies. If the student reads first Professor Fairbanks's "Introduction to Sociology" and then the "Principles" of Professor Giddings, which we should state has an excellent index, he will obtain a very fair knowledge of the nature, scope, and aim of sociology.

C. STANILAND WAKE.

SCHOPENHAUER'S SYSTEM IN ITS PHILOSOPHICAL SIGNIFICANCE. By William Caldwell, M. A., D. Sc. New York: Imported by Charles Scribner's Sons. 1896. Pages, 538. Price, \$3.00 net.

That the interest in the philosophy and personality of Schopenhauer continues unabated is evidenced by the respectable number of contributions which yearly make their appearance, expounding, criticising, or developing his views. One of the latest of these is by William Caldwell, Professor of Moral and Social Philosophy in the Northwestern University at Evanston, and formerly of the universities of Edinburgh and St. Andrews. Professor Caldwell's book, which is rather a portly volume, but bears withal the marks of profound scholarship and thorough philosophical culture, is not a didactic exposition of Schopenhauer's philosophy de-

signed to initiate the reader into the primary elements of the latter's system, but an attempt "to suggest the significance of Schopenhauer's thought as an organic work." The author has tried to connect Schopenhauer "with some few broad lines of philosophical and general thought—with some few broad principles of human nature." The selection of Schopenhauer as the theme most distinctly adapted to exhibiting the bent and upshot of modern thought, is explained by the fact that Professor Caldwell regards him, with Von Hartmann, as representing together one-half of modern philosophy. Von Hartmann Professor Caldwell hopes to be able to treat in a subsequent volume.

The present work is divided into ten chapters. The first considers Schopenhauer's significance. The second and third, which treat of his idealism and his theory of knowledge, attempt to dig down to the theoretical roots of his philosophy. The fourth chapter is concerned with the "bondage of life," from which art and ethics and religion are supposed to set us free. Chapters V., VI., VII., and VIII. present Schopenhauer's philosophy of art, his moral philosophy, and his philosophy of religion, by which he is mainly known to the general public of to-day. Chapter IX. treats of his "Metaphysic," and is designed to exhibit the fundamental character of his thought as a whole. The last chapter essays a positive statement of his system. In this and the "Epilogue" the author suggests points "which might form the material for further study and exposition."

Having stated the contents, we shall now notice some of the conclusions which Professor Caldwell has reached, omitting critical comment.

"It is the service of Schopenhauer," says Professor Caldwell, "to have reversed the whole process of German philosophy, and to have looked at man from 'the side of irrational action and passion, things to which Kant's ethics and Hegel's system had done scant justice. He really wrote about the 'natural man' for 'all time,' saying, perhaps, the last word on that subject in philosophy."

We should naturally be tempted to regard this reversion as a degeneration, but far from being a retrograde philosopher, Schopenhauer is a direct successor of Kant, "although, perhaps, on an opposite line to that of Hegel." Practically, Schopenhauer took his stand upon science, but he placed limitations upon its potency as a speculative instrument. Besides his unsystematic methods slightly offset his advantage in this respect; as Goethe was a *Gelegenheitsdichter*, so Schopenhauer was a *Gelegenheitsphilosoph*, making "little serious attempt to correlate his own thought with any other system in existence save, perhaps the Kantian philosophy."

Though "Schopenhauer's system has a strong materialistic coloring, it is not "materialism. It is rather animalism or panpsychism. His theory of life is essentially metaphysical; living beings are individuations of the will to live, the principles of individuations being space and time." He accepted the Berkeley-Kantian analysis of reality, which, of course, excluded the slightest suspicion of materialistic leanings. Virtually he contends "for a new kind of idealism about reality, a dynamic idealism in which the reality of all things is determined by the

function and purpose they discharge in the cosmic process." He maintained that the world is will, and will means for him force or impulse; "but," says Professor Caldwell, "he still conceives of will in primarily a negative way. He comes in the end to tell us what the world *is not*, and what the end of life *is not*." We may detect here the germ of his Buddhistic and pessimistic predilections.

The result is a sort of illusionism, which Schopenhauer essays to escape from by his peculiar treatment of the religious problem. "In its highest reaches," says Professor Caldwell, "Schopenhauer's philosophy becomes virtually a metaphysic 'of the redemption of the individual from his own misery and from that of the world. . . . His treatment of religion is important. It is essentially different from 'that of Kant and from rationalism generally, laying far more stress on the peculiarly religious feelings as elements in the solution of the religious problem.'"

It is no adequate characterisation of Schopenhauer's philosophy, Professor Caldwell thinks, to call it pessimism. "Schopenhauer himself attached quite as much importance to the positive aspects of his system as to the negative." His success among the degenerates is owing to the circumstance that "it is naturally comforting at times to be able to put one's self in the hands of a man who had the 'strength to assault all intellectual presuppositions and theories about life whatsoever, and, in particular, to help to overturn a philosophy whose proudest boast 'it was to exhibit the intellect or the idea as actually victorious over both nature 'and history.' His success generally is due to the fact that his philosophy chronicles 'the effort a century has had to make to reconcile its ideal theories about life with the facts that science has disclosed or thinks it has discovered.'"

Lastly, Professor Caldwell emphasises Schopenhauer's contempt for dogma and history, which incapacitated him from understanding and justly appreciating even his own mission, which was to "correlate idealism and realism, Platonism and life." Therein, according to Professor Caldwell, lay his real work, of which, however, strange to say, he was absolutely unconscious. As to his influence, "he 'appealed to those who were without any gospel, to those who felt that the will 'was at the bottom of everything, but who yet could not feel that they had been 'wrong in believing something else to be at the bottom of everything. The re-'deeming thing about him and those who began to listen to his teaching was that 'both he and they had got hold of a fact greater, perhaps, than they could reckon 'with, but still a fact.'"

From the preceding statements we may, perhaps, also gather some inkling of Professor Caldwell's own views. T. J. McC.

GRUNDRISS DER GESCHICHTE DER PHILOSOPHIE, ZUM SELBSTSTUDIUM UND FÜR VORLESUNGEN. Von Dr. Johannes Rehmke, o. ö. Professor der Philosophie zu Greifswald. Berlin: Carl Duncker. 1896. Pages, 308.

The literature of Germany is extraordinarily rich in histories of philosophy, and their number seems to be steadily on the increase. The last to enter the field is

Dr. Johannes Rehmke, Professor of Philosophy in Greifswald, who has now enriched the growing cycle of his works by the present business-like and concise *Andiments*, designed for autodidactic purposes or for collateral use with lectures. Its succinct form, utterly eschewing comments and discussions, its banishment of all biographical details, the omission of unnecessary prefaces and introductions, are all qualities which unite in making it unique and valuable and deserving of recommendation for students whose interest is not in need of being aroused. So far as we have been able to examine it, it is a faithful miniature reproduction of its material, devoting to each thinker adequate space, measured by his relative importance in the development of philosophy.

Professor Rehmke characterises the object of philosophy to be the defining of reality, full and entire, in terms of its general controlling factors; hence its designation of universal or fundamental science. Its expressed function is the answering of all general questions touching the world or reality in its largest sense.

Excluding India and all tentative and groping speculation (we cannot infer from the author's statements whether he places the philosophy of India on the same level with primitive and unsystematic attempts at solving the problems of existence), he makes philosophy begin with the Greeks. The development of philosophy is divided into two main parts—the history of ancient, and the history of modern philosophy: the first comprising the time from 600 B. C. to 1600 A. D.; the latter embracing the period from 1600 A. D. to the present. To the ancient period 101 pages are devoted, and to the modern 203. The entire era of the rise of Grecian philosophy, extending from the Ionic physiologers through the Pythagoreans, Heracliteans, Eleatics, Empedocles, Anaxagoras, and the Atomicians to the Sophists, receives but 23 pages. The commanding figures of ancient philosophy, Socrates, Plato, and Aristotle, receive 38. The decline of ancient philosophy, which is made to extend from the Peripatetics, Epicureans, Stoics, etc. to Scholasticism, Western Mysticism, and the philosophical Humanists of the sixteenth century, receives 39 pages. Modern philosophy is divided into three periods, the Pre-Kantian, the Kantian, and the Post-Kantian. In the first, Bacon (3 pages), Hobbes (8 pages), Descartes (14 pages), Geulinx, Malebranche, Spinoza (18 pages), Locke (11 pages), Berkeley (7 pages), Hume (16 pages), the Scottish School, the philosophers of the French Illumination, Leibnitz (17 pages), Wolff, and the philosophers of the German *Aufklärung*, receive consideration. To Kant, *forty-six* pages are devoted. After Kant are treated Fichte (11 pages), Schelling (3 pages), Hegel (5 pages), Schleiermacher, Schopenhauer (8 pages), Herbart (6 pages), and Lotze (3 pages). Lotze concludes the work. A glance at the preceding list and the figures showing the space devoted to the respective philosophers, will indicate the scope and predilections of Professor Rehmke's treatment. Its economic qualities alone might justify its translation into English, provided this could be fluently and not woodenly done.

DE PLATONICIS MYTHIS. Thesim Facultati Litterarum Parisiensi. Proponebat Ludovicus Couturat. Paris: Felix Alcan. 1896. Pages, 119.

SUR UNE NOUVELLE MÉTHODE POUR DÉTERMINER LA CHRONOLOGIE DES DIALOGUES DE PLATON. Mémoire lu le 16 Mai, 1896, à l'Institut de France, devant L'Académie des Sciences Morales et Politiques. By W. Lutoslawski. Paris: H. Welter. 1896. Pages, 34. Price, 2 Fr.

The work of M. Louis Couturat forms a thesis presented to the Faculty of Letters at Paris. In examining the contradictions of the traditional conception of the Platonic doctrines, which students of the subject have left unexplained, the author has noted that the majority of the difficulties spring from the comparison of texts embodying mythical views with purely didactic passages of the Dialogues, and that consequently a criticism of the Platonic myths should precede every expressed interpretation of Plato's doctrines. Thus he has remarked that many passages which interpreters have taken as the dogmatic expression of Plato's thought, are obviously expressions of irony or allegory on the philosopher's part. To distinguish between the two species of expression, therefore, he has first subjected to scrutiny the actual myths of Plato, and with the criteria thus gathered has proceeded to the investigation of all anomalous passages, hoping to prove by his tests that the same are allegorical utterances. He has thus constructed from the actual myths a working allegorical vocabulary for the interpretation of Plato's veiled myths, and has found that God, the idea of divinity, the idea of reminiscence, the pre-existence and survival of the soul, all belong to this category. The circulation and perusal of M. Couturat's thesis will not be enhanced by its being written in Latin.

While upon this subject attention should be called to a little brochure by W. Lutoslawski, Professor at the University of Kazan, on a new method of determining the chronology of the Dialogues of Plato, being a memoir read in May last before the Institute of France. Professor Lutoslawski gives here a brief outline of his comprehensive labors in this field, which to the special student will be of undoubted interest. As Professor Lutoslawski is at work upon an English volume, to be published by Longmans, and containing the full elaboration of his views, it is unnecessary for us to say anything more than that his researches are based upon the stylistic differences of the Platonic Dialogues as corroborated by the method of "logical comparisons" treated in this memoir.

A MACHINE FOR SOLVING NUMERICAL EQUATIONS.

A curious machine for the mechanical solution of equations, invented by Mr. George B. Grant of Boston, Mass., is described in the *American Machinist* for Sept. 3, 1896 (New York: 256 Broadway), which is of considerable theoretical interest, and if the delicacy of its construction bears out its author's claims, is not without practical importance. Five scale-beams, pivoted on parallel sliding car-

riages vertically arranged and carrying negative and positive pans, have their right (positive) arms, AN , so jointed at variable points B as to act successively on one another. The ratio of the distances $AN/BN=x$ is kept uniform by means of a gearing, from the wheels of which through the carriage and guiding them run screws. This ratio is indicated on a graduated scale, having values from 1 to ∞ , by a pointer attached to the fulcrum of the lower beam. Compounding the ratios of the jointed (positive) lever-arms we obtain the condition of equilibrium, and as the corresponding expression therefor, from the multiplication of four binomial factors, the typical equation of the fourth degree $\pm ax^4 \pm bx^3 \pm cx^2 \pm dx \pm e = 0$, the coefficients of which represent the weights to be placed in the respective positive and negative pans. The ratio of distances, or the root x of the equation, is then readily determined by turning a crank, being reached and indicated when the machine assumes equilibrium.

Since for x to be zero the distance BN would have to be infinitely great ($AN/BN=x$), the machine will not find roots approximating to zero; but this difficulty may be obviated by transformation. Also large roots cannot be determined with precision, for BN will have long passed below the limits of mechanical manipulation before x has attained very large values; in fact the distance between the values 1 and 2 on the scale is eight or nine times that between 16 and ∞ . This also may be partly remedied by transformation. On the other hand, the machine does not require the multiple roots to be thrown out, nor that the co-efficient of the highest term should be either positive or unity. Also, since any beam may be left unweighted and hence the coefficient of the corresponding term reduced to zero, the machine will solve partial equations and consequently extract the roots of numbers representable in the common binomial form. The inventor claims it to be practicable to construct a machine delicate enough to find roots to two or three decimal places, so that the instrument might be used as a partial practical substitute for Sturm's theorem.

The free end of any beam, furnished with a pencil point, would trace a curve representing the equation. But the true equational curve must be indirectly produced. It is possible that with the appropriate mechanism, conquering the limitations of the machine, this curve might be directly traced; and it would then, at least for purposes of instruction, furnish a more powerful and certainly more graphic means of elucidating the equation than the scale. At the points of equilibrium the curve would cross the line of the abscissas and so indicate the roots measured on that line, we could see at a glance the character of the roots, etc. This geometrical method of investigating equations has a wide practical application and was beautifully presented a century ago by Lagrange, who even suggested an instrument for resolving upon this basis numerical equations of all degrees, without limitation of the positive or negative character, or magnitude, of the roots. It would be interesting to know if Lagrange's idea has ever been developed. (See the *Séances des Ecoles Normales* for 1794-1795.) T. J. McC.

PERIODICALS.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. Vol. IV. No. 4.

LA "GÉOMÉTRIE" DE DESCARTES AU POINT DE VUE DE SA MÉTHODE. By *B. Gibson*.—LA MÉTHODE DE DESCARTES AVANT LE DISCOURS. By *J. Berthet*.—LE DÉVELOPPEMENT DE LA PENSÉE DE DESCARTES DEPUIS LES "REGULAE" JUSQU' AUX "MÉDITATIONS." By *P. Natorp*.—LA PREUVE ONTOLOGIQUE CARTÉSIENNE DÉFENDUE CONTRE LEIBNITZ. By *A. Hannequin*.—LES RECHERCHES DE DESCARTES SUR LA CONNAISSANCE DU MONDE EXTÉRIEUR. By *H. Schwarz*.—DESCARTES PHYSICIEN. By *P. Tannery*.—DESCARTES ET SNELLIUS, D'APRÈS QUELQUES DOCUMENTS NOUVEAUX. By *D. J. Korteweg*.—DU RAPPORT DE LA MORALE À LA SCIENCE DANS LA PHILOSOPHIE DE DESCARTES. By *E. Boutroux*.—LE TRAITÉ DES PASSIONS DE DESCARTES ET L'ÉTHIQUE DE SPINOZA. By *V. Brochard*.—L'INFLUENCE DE LA PHILOSOPHIE CARTÉSIENNE SUR LA LITTÉRATURE FRANÇAISE. By *G. Lanson*.—LE CHRISTIANISME DE DESCARTES. By *M. Blondel*.—DESCARTES JUGÉ PAR VICO. By *F. Tocco*.—CORRESPONDANCE DE DESCARTES (Autographes et copies manuscrites). By *Ch. Adam*.—(Paris: Armand Colin & Cie.)

The editors of the *Revue de Métaphysique et de Morale* have paid a fitting tribute to the memory of Descartes in this stately number of their journal. Descartes was born in 1596, and in commemoration of the third centenary of his birth, they have devoted a whole special number to the consideration of his life, work, and influence. The number has been made international in character, and all the principal countries of Europe have been represented. Descartes is treated under five aspects: (1) of his method; (2) of his metaphysics; (3) of his physics; (4) of his ethics; and (5) of his influence and personality. The wealth of matter offered by the *Revue* will be apparent from a glance at the contents, which are given above.

It may not be inopportune to mention on this occasion the project of a complete edition of the works of Descartes which the editors of the *Revue* have in hand, the cost of which is to be defrayed by international subscription. The edition will take up ten volumes of from seven hundred to seven hundred and fifty pages each, two of which are to be published yearly. Each volume will cost twenty-five francs, but may be had by subscribers to the *Revue* for fifteen francs. (Editor, M. Xavier Léon, 39 rue des Mathurins, Paris, France; Publishers, Armand Colin & Cie, 5 rue de Mézières. Yearly subscription, 15 francs.)

PROCEEDINGS OF THE ARISTOTELIAN SOCIETY FOR THE SYSTEMATIC STUDY OF PHILOSOPHY. Vol. III. No. 2.

PRESIDENTIAL ADDRESS.—Time and the Absolute. By *B. Bosanquet, M. A.*, LL. D.—WHAT IS MEANT BY THE *A Priori* ELEMENT IN KNOWLEDGE? By

E. C. Benecke.—ANSELM'S ONTOLOGICAL ARGUMENT FOR THE EXISTENCE OF GOD. By *C. C. J. Webb, M. A.*—PHILOSOPHY AND NATURALISM. By *H. W. Blunt, B. A.*—PROFESSOR JAMES ON THE EMOTIONS. By *S. Bryant, D. Sc.*—KANT'S TELEOLOGY. By *C. L. Davies, M. A.*—SYMPOSIUM. In what Sense, if any, is it true that Psychical States are Extended? I. *G. F. Stout, M. A.*; II. *S. Bryant, D. Sc.*; III. *J. H. Muirhead, M. A.*—THE *A Priori* IN GEOMETRY. By *Hon. B. Russell.*—SYMPOSIUM. Are Character and Circumstances Co-ordinate Factors in Human Life, or is Either Subordinate to the Other? I. *B. Bosanquet, M. A., LL. D.*; II. *E. E. C. Jones.*; III. *W. L. Gildea, D. D.*; IV. *A. F. Shand, M. A.*—APPENDIX.—(London: Williams and Norgate. Price, two shillings.)

THE PHILOSOPHICAL REVIEW. Vol. V. Nos. 4 and 5.

THE RELATION OF INTUITIONISM TO THE DOCTRINE OF SELF-REALISATION. By *Prof. Henry Calderwood.*—THE FOURTH DIMENSION OF SPACE. By *Prof. J. H. Hyslop.*—MORALITY THE LAST OF DOGMAS. By *Antonio Llano.*—DISCUSSIONS: I. Self-Consciousness, Social Consciousness, and Nature. By *Prof. J. E. Russell*; II. Mr. Balfour and Transcendental Idealism. By *Prof. R. B. Johnson*; III. The Intensive Statement of Particular and Negative Propositions. By *Prof. Margaret Washburn.*

IS MORALITY WITHOUT RELIGION POSSIBLE AND DESIRABLE? By *Prof. Otto Pfeiderer.*—THE IDEALISM OF SPINOZA. By *Prof. J. Clark Murray.*—ON THE RELATIONS OF PSYCHOLOGY TO OTHER SCIENCES. By *Dr. Harold Griffing.*—THE CAUSE AND FUNCTION OF CONSCIENCE. By *Prof. S. E. Mezes.*—BOOK REVIEWS, ETC.—(Boston, New York, Chicago: Ginn & Co.)

In the most notable and timely article of the September number of the *Philosophical Review*, Professor Pfeiderer sums up his reflexion on the relations of morality and religion as follows: "One must strive for the reformation of the church "in the name of the eternal religio-ethical idea. This can only be done from "within, along the line of historical development. Hence it can only be accom- "plished with the help of a scientific theology. Societies for Ethical Culture, which "despise these methods, are as helpless and impotent against the church as a band "of robbers before a strongly defended fortress. The only result of their efforts "will be that the religious sentiment of the community will suffer. Either there "will be a loss of religious and ethical convictions, and a consequent ethical retro- "gression, or their efforts will indirectly contribute to promote a reaction, having "as its consequence a relapse into dogmatism and ecclesiasticism. In both cases "the effect will be contrary to what they really desire. It is evident, therefore, "that those who are in earnest in demanding a truly ideal morality and a truly eth- "ical community must labor, not for a morality outside of the church, but for a "reformation within the church."

THE AMERICAN JOURNAL OF PSYCHOLOGY. Vol. VII. No. 4.

ON MUSCULAR MEMORY. By *Theodate L. Smith.*—A PRELIMINARY STUDY OF SOME OF THE MOTOR PHENOMENA OF MENTAL EFFORT. By *Ernest H. Lindley.*—LIGHT INTENSITY AND DEPTH PERCEPTION. By *T. B. Robinson, A. B.*—ATTENTION, EXPERIMENTAL AND CRITICAL. By *Frank Drew.*—PSYCHOLOGICAL LITERATURE.—NOTES.—(Worcester, Mass.: J. H. Orpha.)

THE PSYCHOLOGICAL REVIEW. VOL. III. No. 5.

STUDIES FROM THE PSYCHOLOGICAL LABORATORY OF THE UNIVERSITY OF IOWA: On the Effects of Loss of Sleep: *G. T. W. Patrick*, and *J. Allen Gilbert*.—STUDIES FROM THE PSYCHOLOGICAL LABORATORY OF HARVARD UNIVERSITY: I. The Relations of Intensity to Duration of Stimulation in Our Sensations of Light: *James E. Lough*. II. Normal Motor Automatism: *Leon M. Solomons* and *Gertrude Stein*.—ON THE CONDITIONS OF FATIGUE IN READING. By *Harold Griffing* and *Shepherd Ivory Frans*.—THE ACCURACY OF OBSERVATION AND OF RECOLLECTION IN SCHOOL-CHILDREN. By *Shepherd Ivory Frans* and *Henry F. Houston*.—DISCUSSION, ETC.—(New York: Macmillan & Co., 66 Fifth Avenue.)

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Vol. II. No. 3.

DER BEGRIFF DES DASEINS UND DAS ICH-BEWUSSTSEIN. (II.) By *J. Bergmann*.—GRUNDLINIEN EINER THEORIE DER WILLENSBILDUNG. (III.) By *P. Natorp*.—DIE PSYCHOLOGISCHEN GRUNDLAGEN DER BEZIEHUNGEN ZWISCHEN SPRECHEN UND DENKEN. (I.) By *Benno Erdmann*.—JAHRESBERICHT ÜBER ERSCHEINUNGEN DER SOCIOLOGIE AUS DEN JAHREN 1893-1894, NEBST VORBERICHT. By *Ferdinand Tönnies*.—(Berlin: Georg Reimer.)

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNES-ORGANE. Vol. XI. Nos. 3, 4, 5 and 6. Vol. XII. No. 1.

UEBER KOMBINATIONSTÖNE UND EINIGE HIERZU IN BEZIEHUNG STEHENDE AKUSTISCHE ERSCHEINUNGEN. By *Max Meyer*.—UEBER DIE BEDEUTUNG DES WEBERSCHEN GESETZES. (II.) By *A. Meinong*.—DAS EINFACHSEHEN UND SEINE ANALOGIEN. By *Sigmund Reichard*.

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